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LIBERAL AND VOCATIONAL STUDIES IN THE COLLEGE

BY

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NOTE

The original draft of this paper was read in March, 1917, (under a different title) before the Stanford Forum, an organization of the faculty of the University for the informal discussion of academic questions. As now published, the paper has been considerably extended by the inclusion of some additional topics and by a fuller statement on certain points that called forth question or objection on that occasion.

The purpose and general plan of the first writing have remained without change. The discussion has, in large part, taken the form of an argument for certain particular principles and practical corollaries but chiefly because this seemed to be at once the most convenient and the most effective way of presenting a number of distinctions and points of view which the writer believes to be necessary for any clear and profitable thought upon the general problem. These latter have been kept in view throughout as the matters of chief concern. It is hoped that, if deemed valid, they may help towards lessening the ambiguity and confusion which so often darken counsel in the discussion of the subject.

LIBERAL AND VOCATIONAL STUDIES IN THE COLLEGE

I. THE PROBLEM.

§ 1. It is seldom that an important question is finally settled in the terms of its original statement. After much argument a new issue, unsuspected on either side, begins to show itself, cutting across the earlier dividing line. The conclusion reached, perhaps after a series of such changes, may make much of the debate seem meaningless; and all parties in interest may rejoice that neither of the original contentions was able to prevail. As argument proceeds, each side, whether it will admit it or not, ordinarily grows less eager to convince the other of what is beginning to appear a short-sighted distortion of the truth. It is said that no one is ever convinced by argument. But it need not be the sole function of argument to convince. It is better to be enlightened and to enlighten than to convince or be convinced.

In these trite reflections, I have in mind the controversy, so ripe not many years since, as to the value of the natural sciences as compared with classical and other literary studies. We all remember the main lines of the argument. On the part of the traditional collegiate curriculum it was argued that the proper study of mankind was man. Education, in its ultimate meaning, consists not in factual knowledge but in standards of taste, of judgment and of conduct. To these, saints, philosophers and artists have given supreme expression. As for the world of Nature, it has been the office of poets, metaphysicians and prophets to divine, in each age, the vital significance of what the sciences have had to tell. Plato, Lucretius, Dante, Milton, Tennyson and Stevenson¹ gave the interpretative comment in terms of life upon successive scientific conceptions of the cosmos. And for the generality of thoughtful persons, who wish to see life steadily and see it whole, the comment is more to be desired than the text, the distilled significance more precious than the crude materials. A landscape must be surveyed from a mountain top—not from the tangled thickets about the base or from a hole in the ground. A young instructor in English once had occasion to express to me his disesteem of a professor of chemistry. "But what can you expect," he concluded, "of a man who spends his time in an evil-smelling laboratory down in a basement—messing about

¹Cf. "Pulvis et Umbra," in the collection, *Across the Plains*.

in stuff that blackens his hands, and wearing an apron!" Such a sense of the limitations to which preoccupation with the sciences subjects the soul recalls Plato's scornful judgment upon certain thinkers of his day who approached the current morality of the time in a spirit of scientific analysis and explanation. "Does their appearance" (asks Socrates, in the dialogue) "strike you as much better than that of a little bald-headed tinker, who has made some money, has had his chains just knocked off, has been washed in a bath, dressed out in a new coat, and got up as a bridegroom, in which character . . . he is on the point of marrying his master's daughter? . . . Then what may we expect the issue of such a match to be like? Will it not be a base-born and worthless progeny?"²

But the defenders of scientific education were, as we know, not content to let the case rest thus. Surely, they argued, nature has beauties and harmonies of which the poet and painter know nothing. Can the rhythm of a Greek chorus or the balanced composition of a statue match the order and harmony of the solar system? If it is profitable to know the hundred varieties of subjunctive that the industry of Latinists is said to have discovered, is it less worth while to know the thousand and odd species of ants that contest with man the sovereignty of this troubled planet? And if what is called culture be the aim of education, the sciences, it was asserted, can confidently join issue on that ground. If Darwin confessed to a loss of interest in poetry in his later years, that was only a result that might just as probably have come from an exclusive preoccupation with philology, theology or even prosody—it argued no intrinsically barbarizing tendency in biological science as such. Whatever of balance, of temperateness, of sanity a training in literature, mathematics and the arts can give, the sciences also, it was held, can no less effectively impart. The student who develops patience in the laboratory will show patience in his personal relations also. If he learns to see accurately the shape and markings of a fish or to appraise the intelligence of a white rat, he has mastered a method that will enable him to read the Oriental mind or the motives of an I. W. W. Any hard work, it was insisted, develops modesty, self-discipline and self-sacrifice, if only the work be conscientiously and thoroughly done. All effort to interpret the world in any of its infinitely varied aspects tries and tempers the soul and makes a man both more human and more competent in every relation. There is no single and exclusive road to culture. All roads to truth that a man cuts through the jungle for himself are roads to culture also.

§ 2. In this long controversy, declares Professor Shorey in a recently published address, "Science has definitely won." "No claim,

² *Republic*, 495-6 (Davies and Vaughan, trans.).

however extravagant, in behalf of science," he declares, can "provoke the humanist to extenuate the educational value of science or to deny its indisputable leadership in modern life." The controversy is "obsolete and now meaningless".³ And yet the educational world still knows no peace. The sciences, having won acknowledgment of their "educational value," seem not to find this admission into good society a full compensation for the effort it cost. The dignity of academic recognition does not satisfy. As if by an instinct of their lowly origin, the sciences must needs be unquietly bestirring themselves to find vocational application and they presume to look askance at the older disciplines which, being to the manor born, do not show a like concern. They are suspected of plotting an "assault on humanism" whereby to oust the authentic nobility from their ancient seats. The issue, writes Professor Shorey,⁴ "is not the place of physical science in our civilization and our universities: that is secure. It is not the opportunity of industrial or vocational training for the masses: we all welcome that. . . . It is the survival or the total suppression, in the comparatively small class of educated leaders who graduate from high schools and colleges, of the very conception of linguistic, literary, and critical discipline; of culture, taste and standards; of the historic sense itself; of some trained faculty of appreciation and enjoyment of our rich heritage from the civilized past. . . . [These things the assailants of humanism hate.] Or, if you prefer, they are completely insensitive to them and wish to impose their own insensibility upon the coming generation."

That the vocational tendency is in this way a kind of barbarian invasion of our lower and higher schools is a view more picturesque than just or informing. Its undeniable literary color and suggestiveness ought not to gain a too ready intellectual assent. If it were the whole truth of the matter, the old-time feuds that still distract the commonwealth ought undoubtedly in common prudence to be composed. But on the other hand no mere passionate misconception ought to be allowed to hinder the free development of a genuine educational issue not yet clearly defined. We ought, therefore, to consider carefully the hard dilemma offered. Must we explain the vocational tendency as either a blind hostility from without or a discreditable treason from within on the part of ungrateful science? In point of fact, it is neither. It is simply a clearer expression of the modern democratic spirit in society—a more adequate showing forth of the social tendencies and mo-

³ "The Place of the Languages and Literatures in the College Curriculum," in *The American College* (1915), a volume of addresses edited by William H. Crawford.

⁴ *The Assault on Humanism*, Boston, 1917 (first published in *The Atlantic Monthly*, Vols. 119, 120).

tives out of which the older scientific movement sprang. Democracy, we must remember, does not mean mere universal suffrage, nor the absence of rank and title, nor mere equality before the law. It means actual and responsible initiative as a right of every individual who can gain a hearing from his fellow-citizens. It means freedom to work for new adjustments and activities in the social order. It presupposes intelligent purpose as the citizen's dominant and characteristic quality. It is the political and social counterpart of industrial inventiveness and artistic innovation. And modern science, we shall hold, is essentially an expression of this same constructive spirit.⁵ If this is true, the nature of the scientific movement has not been fully apprehended in the view we are considering. If science is a thing so intricately rooted in our modern life as the affiliations just now asserted seem to show, we must somewhat alter our educational scheme of values. We cannot possibly go on conceding, with such urgent candor, the "victory" of science and yet insist, with naïve assurance, that science must serve the unchanged ends of what we are pleased to call "liberal culture". If science has won recognition as an element of culture, our conception of the nature and meaning of culture, whether we happen altogether to like it or not, cannot have escaped a measure of transformation. To declare the case adjourned by a mere admission of the sciences to the academic peerage suggests that our standards of cultural worth remain after the belated act of grace precisely what they always were. Science has simply been weighed in the balance and found not wanting, after all. In such a view, a subsequent vocational movement must inevitably seem either an invasion of envious barbarians from without or an upstart ingratitude in the newly arrived.

We have, then, today a new alignment of the parties in interest in the older controversy, not an issue wholly new and discontinuous therewith. Our present problem is not science but vocationalism and from the standpoint of a rigidly vocational conception of training for such pursuits as medicine or engineering, the researches of science into the nature of energy, the structure of the atom or the mechanism of heredity may well be deemed nearly as wide of the mark as Romance philology or Buddhism in Japan. On the other hand there are few humanists today who would count aprons and acid stains as a serious deduction from the cultural advantage that may accrue from a training in the sciences. If only the eager throngs of students who crowd our laboratories of chemistry and physics were bent on "pure research" instead of mere vocational proficiency there would no longer be a syllable of protest. After much argument a new issue has shown itself. It cuts across the earlier dividing line but this need not argue discontinuity. On the contrary it may rather

⁵ See §§ 16, 17, below.

mark a more fruitful and decisive phase of the discussion, in which the earlier contentions will find a real adjustment.

We shall have solely to do, in this discussion, with vocational or professional training as a part of collegiate education. In American colleges and universities granting professional degrees, it is now commonly the practice to permit the substitution, for the last year of the collegiate course, of an equivalent amount of directly professional work. By this arrangement it is possible to shorten, by so much, the total time required for gaining the baccalaureate and professional degrees. It is contended by some that the combined professional and liberal course amounts to nothing more than a fair recognition of the higher standards now very generally prevailing in our secondary education. The average high-school course of today, it is held, is fully equal, if not superior, in both scope and effectiveness, to the average college course of fifty or even twenty-five years ago—so that the student of today who follows a “combined course” enters upon his professional studies at the age of twenty-three or twenty-four with a general education far in advance of anything possessed by the college graduate of earlier times. This contention, of course, raises no question of the inherent tendencies and relative desirabilities of the two sorts of education. Another line of argument goes further below the surface. It is held that, to the extent of the first year’s work at least, professional study is by every reasonable criterion not less truly cultural than the subjects traditionally recognized as the preëminent bearers of that quality. Why must human anatomy, for example, yield in point of cultural value to the paradigms and syntax of an ancient language, or the law of torts to trigonometry and calculus? If our degrees, whether academic or professional, are to be marks of personal quality and competence and not mere evidence of time spent in scholastic confinement, is there any reason why a subject actually profitable to a student in more ways than one must be counted toward a degree only once, as liberal only or professional only, in an artificial scheme of credit-reckoning? And finally, the still more radical view is sometimes taken that there is no place or need, in collegiate education, for the so-called cultural studies as such. The demand of the time is for men of technical training and competence in all the walks of life. To the end of meeting this demand, the pre-legal or pre-medical studies of the college student should be devoted, not to an extended pursuit of general knowledge or cultural discipline but to the adequate and directly necessary preparation for his professional studies. Indeed, the vocational motive and spirit should, so far as possible, permeate and govern not only the collegiate course but the high-school course as well.

Such, in very general terms, is the ground of present controversy concerning the right of professional studies to a place in the collegiate

curriculum. The professions chiefly concerned in the discussion have hitherto been law and medicine. In various American institutions, combined courses are found in many other professional and quasi-professional subjects, such as divinity, agriculture, architecture, business administration and "social welfare" work. In the case of engineering, the vocational aim in higher education has found large recognition in American universities. The degree of Bachelor of Science (or Bachelor of Arts) is conferred on completion of a four years' engineering curriculum, for the most part prescribed, following the high-school course. In part, however, the curriculum in engineering is made up of courses in elementary physics and chemistry, mathematics, modern languages, English composition and perhaps economics, substantially such as are included in any well-planned curriculum of general education. To this extent (amounting perhaps to a year, or a year and a half, out of the four or five) the usual engineering curriculum may be regarded, for purposes of comparison, as "liberal" or "cultural" also. For the rest it is comparable with the strictly technical or professional parts of the combined curricula in law or medicine—so that the ordinary undergraduate course in engineering may be regarded as a combined course which in its non-technical if not in its technical parts also, falls considerably short of the proportions deemed requisite today in training for the other major professions.

It will be necessary first of all to define what we are to mean by vocational education. There has been much vagueness, in discussions of the general subject, both as to what it is that makes any one or more of a man's activities vocational, and as to the sort of bearing or influence upon a vocational activity that makes any subject vocational. The clearing up of these matters is indispensable for any profitable discussion of the issues involved. To this end, accordingly, let us try the expedient of constructing a series of stages in vocational education, commencing with the lowest and most meager sort of training and extending upward to the broadest scheme of education that can properly be called vocational. We must then consider whether this broadest type of vocational education can produce an ideal type of professional man. We shall see that, for such a result, an extended discipline in non-vocational subjects is essential and we shall mark the common character of these non-vocational subjects by the term "liberal." This done, we can traverse the same ground in the opposite direction,⁶ starting with a general conception of the aim and contents of a liberal education and considering whether such an education can justify itself and prove an important influence in an individual's life in dissociation from any sort of training for vocational competence.

⁶ See Part IV, below.

II. VOCATIONAL EDUCATION AND LIBERAL EDUCATION.

§ 3. We may consider, for the sake of definiteness, the education of an engineer; all that will be said will in substance apply also to the types or levels of training possible in medical or legal education, or in any other kind of professional or vocational education.

As the minimum then, we may imagine a rule-of-thumb course of instruction in the manipulation of the ordinary instruments of engineering practice, in the use of the elementary mathematical formulas, in the strength and properties of the common materials, and in the uses of the various types of beam, truss and the like. In such a course would be included none of the underlying mathematics, chemistry or physics which might enable the student to derive his formulas, design a modified and adapted form of structure or in any way deal independently with unusual materials or conditions. For medicine and the law this level of professional education might be represented by the old-fashioned apprenticeship for a year or two in a physician's or a lawyer's office. If we recognize this as in any proper sense a grade of vocational training, there is evidently nothing in our understanding of the term that necessarily goes beyond the getting of a living. Vocational studies are such as may be quite directly and substantively put to use in the course of a gainful calling.

A second stage in vocational education may be termed the scientifically technical. It is represented by an ordinary course in a college or technical school supplying the obvious deficiencies of the type of training just described. It would embrace the essential mathematics and physical science and would perhaps include English composition and a minimum knowledge of one or more of the foreign languages. This sort of education may well serve as a foundation for genuinely professional and independent work—enabling its possessor to deal with situations departing from the simpler routine types and giving him a sense of assurance and naturalization in the field quite necessary to his most effective use of the knowledge he possesses. But here as before, vocation need signify nothing more than a means of getting a living, and vocational training need include nothing more than what contributes directly to his professional competence and rewards.

Suppose now that on a third level we have this scientifically grounded course of technical preparation amplified by some knowledge of history and economics, and perhaps some acquaintance with literature. It is clear that this will make a considerable difference. Our engineer is now not

simply prepared to develop into respectable professional competence, but he has also a certain understanding of the larger human significance of that great and wonderful division of the world's work in which he hopes to take a part. He can see with some clearness of realization that the immediate and obvious uses for which his bridges, his roads and his aqueducts are built give only the merest hint of their full importance. Through the effort and time such works of engineering save, they contribute, in remotest ramifications of influence, not only to the increase of available wealth of every kind but even to the progress of philosophy and the fine arts. He can understand how the rise and fall of empires have been swayed by the work of such men as himself, more than by the ambition of diplomats and conquerors. His enfranchisement in the domain of literature has taught him something of the breadth and intensity of human life—more, certainly, than his direct and personal experience alone could have given him. He knows better, for this, the more intimate personal quality of desiring and hoping, of striving and attainment, and can understand, as the "practical" man so often is disqualified from understanding, that in these terms and not in physical goods transported or in energy made available are measured finally the meaning and value of his work. Without imaginative interest and participation in these ultimate human values, the engineer who is merely technically competent remains on the intellectual and moral plane of the hired artisan in his employ.

Shall we count this wider comprehension of the bearings of his work a part of the engineer's professional equipment? Unquestionably it must heighten his professional self-respect if he is a man capable of self-respect; it may lead him to prefer great professional opportunity to rewards when a great opportunity opens before him. It may keep him above giving expert counsel against the dictates of his best professional judgment—above lending his skill to any manner of dishonest use. It may sustain him in difficulty and fire him with new resolve. It may keep him strained to his utmost effort. It is assuredly arbitrary to exclude motives such as these from the sphere of the vocational. If they are not vocational, what are they? But we must notice now that in including them we are once for all removing the vocational from any necessary or essential association with the winning of bread or the winning of money. A vocation, one is now obliged to acknowledge, may be, for a worker, chiefly a form of self-expression in an objective social function, whether or not it must also provide the worker's maintenance. Discussions of relative importance are often not worth while. But any influences that determine a man's prevailing attitude toward his work are as certainly vocational, in their degree, as any parts of his technical knowledge or skill. Conceiving vocation in this larger and more liberal way we shall move out the line that

separates vocational and non-vocational studies, so as to include whatever can be shown to make for the attainment of this higher and less privately personal sort of interest. Let us call a vocational education of this third sort a "vocationally centered" education.

§ 4. I proposed above to inquire what manner of man we must wish an engineer or physician or lawyer to be and what studies are needful toward the accomplishment of this complete result. I wish now to point out that in our description of educational levels we have reached the extreme limit of what can be called, in any unambiguous use of language, vocational or professional; and to argue that our program for the education of a professional man is nevertheless not complete.

I have many times heard travelers speak of their satisfaction after long absence in the first sight of their native shores. I have never heard one testify to any heightening of this satisfaction on encountering the customs inspector on the dock. I am willing to concede that my own experience in this regard was exceptional—this will in no way detract from its value, for my present purpose, as an illustration. At certain European frontiers I had faced inspectors. Unexpectedly they had proved entirely harmless but they had been attired in uniforms and caps of quasi-military fashion and they had performed their perfunctory duties with an impersonal and awed solemnity, combined with an excess of jerky precision. The vocation seemed to have absorbed the man. My American inspector, on the contrary, approached in a casual manner of half-humorous deprecation, attired in a well-kept summer suit of comfortable sort, and bearing no insignia of his function but a lettered band about his white straw hat. His inspection, be it said, lacked nothing in thoroughness and dispatch, but it was carried out with an air of detachable, though by no means deficient, interest and with a human civility that had marked two relentless English searches of my baggage for cigars and strong liquors. And my admittedly exceptional satisfaction in my home-coming experience came from the reflection that here was a man who was clearly more than his vocation—a man who could combine with perhaps entire belief in its importance, and certainly with efficient performance, a saving sense of his vocation's partial and contributory relation to the whole duty of a man. "This," I said, "is indeed America!"

It is obvious of course that a minor vocation or calling is not fairly comparable in this regard with a technical or learned profession. To an engineer of broadly vocational training in our third sense, his profession may well become far more engrossing than any relatively unskilled occupation, and instead of being belittled and reduced to an automaton by this fuller personal identification with his work he will on the contrary be enlightened and humanized. But still the lesser instance illustrates and clari-

fies the greater. It is not our question—there is no question, let us say—whether an education vocationally centered and organized can be a humanizing education. But it is altogether open to question whether an education vocationally centered and vocationally organized (as on our third level) can humanize as broadly and deeply as the needs of human nature and the well-being of modern democratic society require.

Let me barely mention some of the essential human interests that our third level of vocational education leaves without adequate recognition and cultivation. As I wish to avoid the "painful elaboration of the obvious," I shall refer, without dwelling upon them, to the relations of marriage and parenthood; and to friendship—a relation to which we devote little deliberate thought today but which Greek philosophy counted as an institution of far higher moral value and spiritual profit than either marriage or parenthood. Merely to name these interests of man is enough to suggest the qualities of sympathetic insight, temperate discrimination, suspense of judgment, alertness and generosity of interest, and many others which they require for their due exercise and expansion; and to indicate the value, for their cultivation, of a wider conversance with literature, a knowledge of general psychology and some measure of reflective insight into the meaning and probable worth of our over-ready pronouncements of right and wrong. It will be enough, again, merely to refer to that whole group of interests whose place in human life and action at large is well expressed by the generic term "play"—a term which covers, of course, not simply games, sports and the automobile, but the creative arts as well, and the powers of appreciation in their widest scope. And finally, there is that vast complex of varied contacts, relations and responsibilities that may be denoted, for want of a better term, by the word "citizenship". It would be superfluous surely to enlarge upon the need of an orderly and careful study, in such a time of social movement and reorganization as that in which we live, of the ways in which men's actions in society affect the interests of other men; upon the need for the arousal and intelligent discipline of the sympathies; upon the need for understanding of social relationships in their biological as well as their psychological aspects. Without a measure of such knowledge, somewhere and somehow gained, good citizenship can be only a pious aspiration or a naïve pretense.

Let us consider the matter more at length in relation to our present theme. Stress has been laid upon the heightened sense of the value and dignity of such a profession as engineering that may come, still on a vocational level of education, from a certain amount of sound training in history, economics and literature. Insofar, no doubt, the engineer is a better citizen. It is well that he should clearly know and thoroughly

appreciate what his profession has done and can do in the world, directly and indirectly, immediately and remotely, to elevate the life of man. Let any training be called vocational in the best sense that deepens a man's respect for his profession and his personal satisfaction in it. For out of such an attitude must proceed, in some measure, a more effective vocational performance—not necessarily as measured by income earned but certainly as measured in terms of scientific quality and the welfare of society. Recognizing all this to the full, we must still hold our third level of professional education deficient. That personal modesty is a welcome quality, and often a saving grace, in a professional man, few will be disposed to question. But it is well that to this should be added the still rarer quality of professional modesty as well. It is one thing, and a good thing, to be able to view the whole history and life of man from the point of view of one's profession—this may well temper an overweening conceit of one's own private abilities and importance as a practitioner; but it is another and a better thing modestly to see one's profession as only one single factor among many other not less vital factors in the history and life of man. The former is the attitude of a broadly trained and objectively interested professional man; the latter is the attitude of a professional man who is also an enlightened citizen. An illustration or two will make clear what is meant by this. The two attitudes are often not distinguished and much discussion of our subject proceeds upon a hasty assumption of their identity.

Let us consider, for example, some of the issues presented by what is called "Scientific Management". The engineer, let us say, is assured by an expert in the "time and motion study" features of the new "science" that a certain engineering work can be most economically and rapidly completed by a rigorous application of the system. An engineer who not only knows his profession and what it can contribute to the social welfare, but who realizes also the human quality and interests of those who do the laborious work, may hesitate to introduce the system—at least until all interests have been safeguarded by suitable modifications. In an engineer whose education has been vocational and not also liberal, one may expect less of such hesitation—his interest will be in expediting the work—in "making the dirt fly" with the maximum of rapidity and the minimum of cost in muscular energy and wage outlay. Or, taking ostensibly higher ground, such an engineer may argue that the economic saving effected for society will be a sufficient justification for the change, outweighing any possible economic and moral damage to the workers. All unconsciously, even such a judgment only expresses in a roundabout way the normal professional bias of the engineer. Professional eagerness to see the work go forward, and professional understanding of the human im-

portance of the finished work to all who are to use it, are in every way qualities creditable to the engineer and assets valuable to society. But in no way do they qualify the engineer to understand and evaluate the other elements in the situation. We may consider again, such issues as arise in connection with the tenure of employment of labor. It may be argued, for example, that nice inquiry into the right and wrong of disputes between workmen and foremen, although necessary for ideal justice in individual cases, means loss of time and waste of effort which must in the long run tell in curtailment of production. It need not be assumed that this is true, taken in the large, as a matter of physical fact. It may well be that, in a large business concern, a representative committee for the impartial adjustment of disputes and grievances is actually good business policy. The workers' assurance of fair dealing and the general good will that may develop on this basis may count for more in actual units of output in the long run than the cost and trouble of maintaining the system. One is informed, indeed, that even as an actual matter of book-keeping, there can be no manner of doubt about it. I am only contending that the tendency of a vocationally centered training must be strongly to impress economy and material, if not pecuniary, productivity as supreme controlling principles in industrial undertakings. That type of training can prepare neither the imagination nor the social interests of a young man to entertain, as an hypothesis worth testing, any new procedure or policy that seems, in the light of current analogies and principles, to promise ultimate pecuniary loss. Nor will it provide him with the intellectual basis for preferring an actual sacrifice of industrial efficiency in a given case, in the interest of self-respect, the spirit of responsibility and a sense of freedom in the workers. Many men overcome, to be sure, the limitations of their training. But we cannot assume, on the strength of the genius for diplomacy, philanthropy or statesmanship sometimes displayed by eminent engineers and lawyers, that the impulse toward these higher kinds of service and the capacity for a generous social outlook need no special fostering or discipline in the generality of young men preparing for professional careers.

In the interest of a clear conception of our third level of technical preparation and its natural limitations, it was granted that a very broad but still "professionally centered" training might well tend to develop a highly objective and disinterestedly social type of professional attitude. Now the engineering curricula of our colleges may perhaps be assigned a place somewhere between our second and third levels, but distinctly closer to the second than to the third. And accordingly we might surmise that something of the result here referred to remains to be desired and achieved in the education of American engineers even were there no

testimony to that effect from the ranks of the profession.⁷ Be this as it may, however, we are here concerned not with the tendency of a broadly conceived professional training to make for a higher level of professional attitude and outlook, but with the further contention that even a curriculum of that advanced type must, in the end and from the standpoint of the larger social interest, prove inadequate. No narrower interest can be acknowledged by institutions of public education maintained by the state or by endowment; and in the conception of this interest no makeshift limitations can be contentedly and thoughtlessly accepted as finalities.

⁷ Cf. MORRIS LLEWELLYN COOKE: *Snapping Cords; Comments on the Changing Attitude of American Cities toward the Utility Problem* (privately printed, Philadelphia, Department of Public Works, 1915). This writer alleges that on public service commissions, the duties of which are "very largely engineering," there are "almost no engineers". Discussing this fact he goes on to say: "At a time when a great majority of appointees to these commissions are lawyers there is some underlying reason why engineers are almost never appointed to them. It does not seem to me that the public loves a lawyer any better than an engineer—perhaps not quite as much. But there is a feeling that even a lawyer can see two sides to a question and may be successful in maintaining either of them." (pp. 25, 26.) Mr. Cooke declares further that "In municipal utility rate cases the cities must depend for their experts on the relatively few men of high standing and broad experience who work for publicly owned and operated companies or those even rarer men who for one reason or another . . . have broken away from the system which controls the view-points and activities of the great majority of men who serve the private companies. . . . Let me repeat that most cities are at almost a total disadvantage in securing legal and engineering service of an effective kind in any utility matter. . . . In a paper previously referred to . . . I said that it was 'practically impossible (for cities) to secure the services of those with reputations already made in the electrical field.'" (p. 31.)

One who has not made a careful study of the matter can, of course, have no opinion of his own as to the facts alleged by Mr. Cooke. These statements are here quoted merely as serving to illustrate in a concrete way the general and, in a sense, hypothetical considerations advanced above. The indifference to the public interest which Mr. Cooke here asserts is not in substance different from what lawyers of the highest standing and authority declare to be in some measure true of their own profession also—an opinion in which doubtless many engineers are ready to concur. Thus Mr. Elihu Root, as President of the American Bar Association, said in 1916: "With our highly developed individualism . . . it is quite natural that lawyers employed to assert the rights of individual clients and loyally devoted to their clients' interest should acquire a habit of mind in which they think chiefly of the individual view of judicial procedure, and seldom of the public view of the same procedure. . . . A clear recognition of the old idea that the state itself has an interest in judicial procedure for the promotion of justice, and a more complete and unrestricted control by the court over its own procedure would tend greatly to make the administration of justice more prompt, inexpensive and effective; and this recognition must come from the Bar itself." *Reports of the American Bar Association*, Vol. XLI, pp. 359-360, 364.

There is, in fact, no developed type of human undertaking in which the dualism of technical proficiency and professional achievement on the one hand and the fulness and order of life in all its aspects on the other does not appear. As the demands made by society upon an art or craft or profession grow complex, a technical apparatus of distinctions, concepts, formulas and procedures must be contrived to meet them. The mastery of all this becomes constantly a larger and more engrossing task requiring longer preparatory training for its accomplishment and stimulating more and more in the worker a workmanlike or professional type of interest. Inevitably the worker comes to look more immediately to the manner of his performance and less consciously to the complex of more general human purposes and needs which his activity serves. "Efficiency" comes to be the controlling interest and, strictly speaking, efficiency is only the quality of a good tool or of a good servant. It is an excellence in administration and the dispatch of business but in whatever belongs to statesmanship, to the building of policy or to constructive choice it is mainly a pretentious and confusing irrelevance. And the necessity of being a statesman, in a small way or a large, is what separates the citizen of a free state from the subject of a despotism.

§ 5. It may be worth while to mention one or two more questions of public policy in which the view of the professional practitioner will in general tend to differ from the view which an inclusive consideration of all the social interests affected would require. It may be argued that the railways of the country should remain under private ownership. This is the system under which they have been built and on the whole the country has been better served and at less cost than it could have been by any symmetrical plan of railway construction however carefully and conscientiously projected in advance by government. Private ownership will assure for the future more economical and generally more satisfactory administration, in an industrial sense, than the state can possibly promise. But it is argued on the other hand, without denying large measure of force to these objections, that acquisition by the state would have the immense advantage, mainly political and social, of removing from the body politic an overgrown and closely centralized property interest. And it is held that purchase by the government would be the most effective way of providing the nation with a greatly needed constructive task of truly national proportions and significance. Such a task would compel the active coöperative interest of all classes, serving thus to make familiarly concrete the conception of government as an organ of the common intelligence consciously concerning itself with the common welfare—this instead of our present anomalous combination of intense devotion to the "flag" with an ac-

tive suspicion and dislike of governmental action in all but a few long familiar ways. Whichever way the question is settled it is plain that the decision is ultimately not one of quantitative fact but of policy and choice, in which considerations of engineering technique and accounting can help only part way toward the settlement. We can define in these ways some of the conditions of the problem, determining perhaps whether the general advantages hoped for will cost us much or little. But *how* much in the end we shall be willing to pay in possible lowered efficiency and increased cost of operation must depend upon the importance we attach on other grounds to the other elements we may find to be involved.

We may consider, again, the problem of the development of a country's natural resources—such a problem, say, as confronted Porfirio Diaz on assuming the control of Mexico. In the absence of domestic capital and skill, the obvious way to assure rapid exploitation is to invite foreign investment by a policy of liberal grants and concessions. The country needs the materials of every sort that will thus be made available. For the promoter and the engineer, all questions of personal profit aside, there is positive offense against the eternal fitness of things in the arrest of the country's industrial development by a more patient policy—in the thought of vast mineral deposits and measureless sources of mechanical power held from use until the slack enterprise and energies of a backward people shall make their utilization possible. But a statesman who looks beyond the lifetime of his own generation may deem it wiser to wait—if by waiting he can safeguard his country's political and economic autonomy and assure to future generations of his countrymen a more ample and more evenly distributed participation in the country's wealth. Of these less tangible but very real and material aspects of the case, the engineer, as engineer, knows nothing—and, in a professional sense, cares nothing.

The statesman and the citizen need a wider range of interest than an education professionally centered can be expected to arouse and discipline. What I have in mind may be illustrated from another field by the procedure of a lawyer in a case involving the constitutionality of labor legislation who fills his brief with citations of fact from the writings of sociologists, psychologists, physicians, physiologists and alienists instead of rule and precedent from legal texts and the decisions of judges alone. These latter types of authority must date in large part from bygone stages in the evolution of society and represent at least partly superseded levels of scientific interest and knowledge. The lawyer trained in a vocational sense alone cannot possess the foundation and background of knowledge in history, in economics and in hu-

man nature, requisite for a saving and vital understanding of this necessary relativity. The law for him will be, as it is for so many lawyers of learning, experience, and public spirit, a realm apart, a Platonic system of eternal verities containing, implicitly and *a priori*, a rule of abstract justice for every possible situation.

Our contention accordingly is that in cases like these, broadly intelligent citizenship transcends, as a matter of principle, the vocational point of view and attitude. The full education of a citizen lies beyond the possibilities of even a broadly vocational education. Any action of an engineer or of a judge is, to be sure, in a loose sense vocational merely because it is taken in the course of his professional activity as an engineer or judge. But to use the term "vocational" so loosely in a discussion of vocational education as one among other educational types or policies is hopeless confusion. Equally, in this sense, would it be "vocational" for a judge to accept a bribe: as a matter of fact, our engineer's rejection of "scientific management" on the grounds suggested is properly no more "vocational" than his opinion on a matter of public policy with which he has no professional connection and in which he has no professional competence. In his professional capacity he may report that the system will prove workable and, in a business sense, advantageous to his employers—this he will certainly do unless he believes the "experts" to be in error or to have left factors out of account which before long will work the breakdown of the methods proposed. But as a man and a citizen of the world he may then go on to point out to his clients or employers that the effect upon the workers will be detrimental—that through their degradation as personalities and their weakening as economic bargainers in the labor market, the health of the democratic body politic will in so far be impaired. Perhaps indeed the distinction for which I am contending may be expressed in just these terms. The engineer vocationally trained is qualified as a serviceable employee; the liberally educated engineer is qualified to declare and to exercise intelligently in professional matters, the ultimate discretion of a citizen. If ultimate discretion in the particular case in point does not rest with him, he can at least have his own opinion and he can aid in the growth of an intelligent public opinion on the question.^{7a}

^{7a} I quote the following from a series of interesting articles by Dr. Sanford A. Moss of the Research Laboratory of the General Electric Company at Lynn, Massachusetts. "In order to secure success in mechanical engineering there should be proficiency in [machine design, kinematics and mechanism, machine drawing, mechanical laboratory and experimental engineering]. There should also be proficiency in physics, and in elementary college mathematics. This probably completes the list where proficiency is an absolute necessity. There are a great many

§ 6. It is no part of my purpose to discuss in detail the elements of a liberal education. That is a task by itself, which must be repeated for each well-marked period in the life of a changing society. It is enough for the present purpose to see that the ideal education for a free citizen following any vocation can never be an education vocationally centered—by which is meant an education in which each element is measured and evaluated in terms of its furtherance of the chosen vocational pursuit. For no vocation can supply a vantage point from which an inclusive and final view of the social interest can be taken. If this is granted, there are still at least two lines of objection that may be taken against the necessity of non-vocational or liberal education. To these some attention must now be given.

(a) In the first place, it may be asked, if one has a vocational proficiency of some substantial marketable sort may it not be safely assumed that the humaner interests of life will in the long run take care of themselves. As human nature goes, it is only too probable that unless a man can count upon a moderate income his family life will languish, that he will shrink more and more from the society of his friends, that his interest in public affairs will shrivel up and his con-

other things in which proficiency is desirable, but not imperative. This includes languages, higher mathematics, calculus, mathematical thermodynamics, mathematical hydrodynamics, and manual dexterity in shop work. . . . The writer has endeavored to demonstrate that it is possible, and in some cases desirable to give [the necessary] courses without previously having given the traditional preparatory courses." This would require that "a great many principles, formulas, and methods be given to the pupil arbitrarily for use in working up the tests. All of these . . . would at a later point in the college course be developed rationally." (*Bulletin of the Society for the Promotion of Engineering Education*, Vol. VIII, No. 2, pp. 51, 52; Vol. VII, No. 3, p. 145.) As to the other group of studies, in which proficiency is "desirable but not imperative," Dr Moss holds "that aptitude is a real essential for successful use of a subject and that no actual use can be made of a subject by an incompetent person who attempts to make laborious study take the place of aptitude." For example, "All engineering graduates take courses in calculus. It is popularly supposed that an engineer makes daily use of this calculus instruction. This is far from being the actual case, however. . . . The average engineering graduate would be wholly at a loss to make an actual solution of an engineering problem which involved an original application of calculus. This, however, is not a disability for engineering work, since the necessity for the application of calculus is as rare as stated." (*Ibid.*, Vol. VI, No. 9, pp. 645, 638.) "There are plenty of directions in any subject for which there is aptitude, in which the necessary training can be given, without necessity for going to some other branch, where there is no aptitude. . . . Syllogisms exist in political economy, just as well as in chemistry. . . . It is very doubtful if a non-mathematician makes any gain in clarity of thought by pursuing a mathematical subject in which he is more or less muddled all of the time" (p. 646). "There are many things which a mechanical engineer can study to advantage if he

cern for the well being of his fellow men be turned to envy of the deserving and the fortunate. It is only too clear that, by and large, a certain material provision is an indispensable condition and support for moral health and vigor. And does it not then follow that, if the material provision is, humanly speaking, assured by the possession of some sort of trade or skill, these greater things will be added unto it in the natural course? The formal fallacy of this is obvious but formal fallacy at best is only a warning, not disproof. And in this case the facts, fairly taken, supply the answer. A plan of education must be adapted to the generality; there was probably never a time when the average man with an income above the level of subsistence had more need than today of an informed and intelligent ability in the judgment of values. The market is full of offerings dear enough in money cost but essentially cheap in the tax they lay upon intelligence, taste and effort—a catalogue ranging from the motion-picture of the multitude to the more complex and plausible futilities that have their outcome in the childless family and general boredom. And in our immediate present, neither the domestic affairs of the nation nor the international situation are such as to suggest the sufficiency of untutored “conscience” or “common-sense” or any other *alias* of the “light of nature” for their clarification. Nor again does an increase or wider diffusion of proficiency in

is not proficient in calculus. There are many men well fitted to be mechanical engineers who are compelled to leave college because they are not proficient in calculus. Many of these afterward take up mechanical engineering without their college degree and make a success, to the everlasting shame of their former college professors” (pp. 648-9).

In Dr. Moss's opinion, accordingly, a considerable amount of time is misspent by a considerable number of students who pursue engineering curricula of the present standard type in American universities. For such students, Dr. Moss proposes the introduction of courses, in the subjects in question, treating “the subjects merely as interesting branches of human knowledge” and showing how the apt are using them as “tools.” “The primary object would be to give a general survey of the subject [including its history and human importance] without attempt to give facility or proficiency in the actual use” (p. 650). “If a student in mechanical engineering did not get on well in the class where the use of calculus was taught, he would be excused from it, and allowed to take the other course where he would learn ‘about’ calculus only” (p. 648). If this suggestion of Dr. Moss were carried out, it would seem that certain subsequent mathematical courses involving the use of calculus would have to be eliminated, wholly or in part, from the curriculum of the prospective engineers in question. Time would thus be made available, even within the limits of the four or five years engineering curriculum as at present established, for suitably planned and conducted courses in literature, history, the social sciences and philosophy. It is probably true that more courses than need be, in the so-called liberal subjects, are conducted in quite as technically professional a spirit as are the avowedly technical courses making up the professional curricula of our universities.

the various sorts of technical or professional work appear to constitute an adequate guarantee for a better order of things in the future.

(b) Another objection may be that "vocation" has been taken in the above in too narrow a way. A vocational or professional education must indeed be incomplete if this means merely preparation for the making of tangible commodities or the rendering of marketable services. But, as Professor Dewey argues, "Such restricted specialism is impossible; nothing could be more absurd than to try to educate individuals with an eye to only one line of activity. In the first place each individual has of necessity a variety of callings, in each of which he should be intelligently effective; and in the second place any one occupation loses its meaning and becomes a routine keeping busy at something in the degree in which it is isolated from other interests." Thus (1) every man "must, at some period of his life, be a member of a family; he must have friends and companions; he must either support himself or be supported by others, and thus he has a business career. He is a member of some organized political unit, and so on. We naturally *name* his vocation from that one of the callings which distinguishes him rather than from those which he has in common with all others. But we should not allow ourselves to be so subject to words as to ignore and virtually deny his other callings when it comes to a consideration of the vocational phases of education." And (2) a man's efficiency in any calling, "in a humane sense of efficiency, is determined by [his calling's] association with other callings. A person must have experience, he must *live*, if [his special vocation] is to be more than a technical accomplishment. . . . This must be an expression of what he suffers and enjoys in other relationships—a thing which depends in turn upon the alertness and sympathy of his interests. . . . There is doubtless . . . a tendency for every distinctive vocation to become too dominant, too exclusive and absorbing in its specialized aspect. This means emphasis upon skill or technical method at the expense of meaning. Hence it is not the business of education to foster this tendency, but rather to safeguard against it, so that the scientific enquirer shall not be merely the scientist, the teacher merely the pedagogue, the clergyman merely one who wears the cloth, and so on."⁸

The general accord of the present argument with these contentions of Professor Dewey will be evident to the reader. But Professor Dewey appears to find the safeguard against the narrowness and distortion of interest due to a vocational education in a wider vocationalism. Even a broad education of our third type, which has been called, for the sake of convenience, a "vocationally centered" education, would, unless

⁸ JOHN DEWEY: *Democracy and Education* (N. Y., 1916), pp. 359-360.

I am mistaken, need supplementation and balancing, in Professor Dewey's opinion. The balance is to be redressed by a recognition and cultivation of the individual's other inevitable interests—but these, we are to observe, call for activities no less vocational, in a broad and humane sense of the term, than those which belong to his special bread-winning pursuit. All life, that is to say, is vocational in this view and accordingly all education should be so. Vocationalism is a matter of spirit and method in education—not, in the last analysis, a quality of certain aims and subjects mistakenly set over against certain others.

Is life then completely vocational—or at all events vocational in every aspect that need be made a matter of educational concern? This has at all events not been our assumption. We may consider for a moment the higher vocations of man for ignoring which a professional education of even the better type is to be judged deficient.

Every man, says Professor Dewey, "must at some period of his life, be a member of a family, he must have friends and companions. . . . He is a member of some organized political unit."⁹ It is perfectly clear that in each of these relations a man may conduct himself well or ill, intelligently or blindly and it seems equally clear that there are facts and principles of behavior belonging to each which can be taught and which, if learned, will assure a fuller realization of what these relations can be. And if we choose in an appropriate context to think of living in these relations as a part of the "vocation of man" we may call knowledge of this profitable sort vocational. Just here, indeed, belongs the instruction so generally given in lower and higher schools in cooking and sewing, in home decoration and house sanitation—and in some universities also, where, however, such a subject as cooking may be found more fittingly announced as *The Application of Heat to Food Materials*. Such subjects undoubtedly relate to the vocation of the mother, wife and home-maker. To them might be added studies in physiology, heredity and eugenics, psychology and diplomacy. There are, likewise, sundry possible vocational studies relating to friendship, the absence of which from our curricula is doubtless due to the comparative neglect of this social institution by the modern student of manners and customs. How and when to keep silent; how and when to speak; how to write a letter of admonition, encouragement or gossip; how and why to commence and to terminate a friendship—these may be suggested as important divisions of a possible science or art of "Philology"! For the relation of membership in a political unit we already have educational provision; effective instruction in "Civics" is a matter nowadays much under discussion, among experts and teachers. And to cover in

⁹ *Loc. cit.*

a more or less vocational way the field of our more general relations to our fellow-men at large we have courses in Political Economy, in Social Psychology, in Criminology, in Dependents, Defectives and Delinquents and in the Principles and Practice of Charitable Relief. Such then are the broader possibilities of vocational study which are opened as soon as all our many-sided life is recognized as one inclusive and complex vocation.

The conception is undoubtedly attractive—and particularly so when one perceives the implication that, ideally, what we ordinarily call a man's vocation ought to be an expression of his nature as spontaneous and congenial as those other interests of his which we commonly regard as more intimately personal. But the question remains whether a "vocational" approach, of the sort suggested, to the experiences of parenthood, marriage, friendship, play and the rest does not leave the substance and meaning of these things untouched and unexpressed. I have ventured to speak just now of cooking; one must recognize a difference between the aspects of this important matter presented in a book of recipes or a treatise on nutritive values and those suggested by the pictures of Homeric hospitality or by Dickens' genial specifications of the repasts served on stormy nights in bright and cosy inns to belated travelers.¹⁰ And at the other extreme of the scale it has been urged above that in their essential character and import, such relations as marriage, love and friendship lie beyond the range of our vocationally centered type of education. These relations Professor Dewey also calls to our notice in his strictures upon the narrowly professional outlook upon life. But for him the inclusion of these matters within the scope of education means, not a departure from the vocational level of interest, but a widening of interest still on the vocational level—for there *is*, in truth, no other level of interest. And this is what seems questionable. We may indeed approach these relations with a clear and business-like knowledge of at least some of the conditions upon which

¹⁰ "But after they had gazed their fill they went to the polished baths and bathed them. Now when the maidens had bathed them and anointed them with olive oil, and cast about them thick cloaks and doublets, they sat on chairs by Menelaus, son of Atreus. And a handmaid bare water for the hands in a goodly golden ewer . . . and to their side she drew a polished table, and a grave dame bare food and set it by them, and laid upon the board many dainties, giving freely of such things as she had by her, and a carver lifted and placed by them platters of divers kinds of flesh, and nigh them he set golden howls. So Menelaus of the fair hair greeted the twain . . . and took and set before them the fat ox-chine roasted which they had given him as his own mess by way of honour. And they stretched forth their hands upon the good cheer set before them." *Odyssey*, IV (Butcher and Lang, trans.).

they must depend—how strains may be avoided or tided over, responsibilities met, interest kept fresh, the normal course equably sustained. But when all the variety of “vocational” knowledge requisite to these ends has been marshalled and reduced to convenient formulas, there remains much that is needful to be known of their immediate and complex quality as experiences that can be gathered from Donne and Milton, Tennyson, Browning, Whitman and Ibsen—perhaps even from the lighter genius of Herrick and Austin Dobson—but is foreign to the scope of eugenic researches and the writings of Havelock Ellis and the serviceable textbooks of Domestic Science. In point of fact, the study of Eugenics, apart from its intrinsic scientific interest, undoubtedly gains its present vogue from our growing generous desire that the higher possibilities of these and other human relationships may in future generations be more certainly and more generally realized than is now the case among us. A command of the “vocational” technique of life renders not less but more significant those documents of human experience in which the immediate qualities of life at its best have found supreme expression. The better we have known these qualities the more determined we become that wider and wider circles of our fellow-beings shall possess them abundantly also. We are concerned here, of course, with the distinction, noted by William James, between “knowledge about” and “acquaintance with” as the irreducible modes of our experience. There is a suggestion of thinness and pertness in young people whose studies perhaps in “social service” or in “home economics” have given them a tidy modicum of “knowledge about” and knowledge instrumental towards certain of the things of which we have been speaking. They would have done well to gain also such suggestive “acquaintance with” them as an equally attentive and serious study of literature, history and art might afford.

§ 7. And at this point the two objections to our general position draw together. The first objection was that liberal education as a complement to vocational is unnecessary because the results expected from liberal studies may be expected to come of themselves under prosperous vocational circumstances. The other objection was in effect that no education not in a broad sense vocational in spirit can be genuine education. What in the one view needs no attention, in the other deserves none. Both views then raise the question of the positive value of studies which aim to give *acquaintance with* the immediate qualities of life and experience.

The general answer must be that such studies supply the developing mind and character with a suggestive foreknowledge, at once stimulating and steadying, of the characteristic interests of life and this is

precisely what no study of the means or machinery or vocational technique of life can do. To say this is to convey no disesteem or depreciation of the latter—it is only to say that, true as it is that we cannot have travel without railways and telegraphs, health without hygiene and medicine and surgery, social intercourse without law, it is equally true that unless we can conceive and wish to live a good life in which these things are to have their place, the instrumentalities requisite toward a good life are so much idle lumber. And if it is urged that one needs no teaching—it is only necessary to be “normal”—in order to desire such things as these, the answer must be that, in the only sense in which it is true, such a contention is all but meaningless. For all depends upon what *in the concrete* we actually understand by travel, health and social intercourse and by the other “humane” things of which we have been speaking, upon what *in detail* we expect these things to signify, upon whether we conceive them narrowly in terms of a limited experience which we have taken as it has come, without effort to extend and deepen it, or conceive them with living imagination, as full of indefinable but important possibilities. And the concrete meaning we attach to these things, if it is to extend beyond the limits of habit and routine, must be suggested from without by the experience of other persons—not only through direct communication but through every form of permanent human record and expression. It is only too easy, in such a matter as the present, to sink or to soar into abstractions—a human failing to which those who most earnestly and proudly profess their preference and unique aptitude for the matter of fact and practical view are often strangely subject. We may speak of friendship, study, play, parenthood, travel, marriage, and the rest, and we may declare that without these life would not be worth living. But no such general protestation—only the concrete detail of fact and expectation which these otherwise indeterminate symbols may chance more or less clearly to mean to us—can actually sustain and animate our interest in them. Only this can give any one of them effect in a situation of rivalry with another active and conflicting interest.

It is for this reason that liberal studies are essential. They supply the imagination with a range of suggestion wider than any man's immediate social contacts can ever bring him, freeing it in a measure from bondage to inexperience and habit and providing material out of which it can fashion, by its own art and judgment, its own individualized purposes. Thus it is, quite literally, that they deserve to be called “liberal”. They help us to achieve both the negative and the positive conditions of freedom. And in so far as they do these things the liberal studies are doing what “vocational” or “practical” studies belonging to the fields of interest in question can never do. These latter studies

must inevitably assume a dogmatic and, for the time being, uncritical conception of a desirable manner of life or desirable type of human being. Such a conception they plainly need for use as a standard of reference—as the discreet editor of a monthly page of “household art” must adapt his suggestions to the presumable ambitions and spending ability of his average reader. And this in principle is true all the way from domestic science to eugenics. If we are to breed a “good” race, we must know what we mean by a “good” life. If we are to go beyond the negative goal of purging the racial stock of such obvious evils as feeble-mindedness, alcoholism, and hereditary criminality, some positive conceptions of what we want must be defined. Before this task has been finished it will sooner or later be found necessary to make our choice between the scriptural three-score years and ten, or a possible four-score (combined with a manner of life doubtless oftener wished for than enjoyed, even in ancient Palestine) and an even three-score years or less of the strenuous life. And if we wish human life to become, in Spencer's terms, *both* “longer” and “broader” than it now is, this again will be no dispassionate scientific consequence deduced from eugenic principles but the constructive and passionate project of a newly-awakened and (we may hope) liberally enlightened imagination. For construction of such a sort, wide acquaintance with the contents and qualities of life and a discipline in their appraisal are first requisites.

It may appear that in thus assigning a use for liberal studies we are after all returning to the view that regards them as vocational—more truly and essentially vocational indeed than those studies which are more commonly so regarded. If they render a service they are vocational; if they do not they are but a busy idleness. With this suggestion, taken on its own account, there would be no particular fault to find but we must not fail to note that such a use of the term has no place in a discussion of vocational education. Liberal studies have a “use” in terms of life—so we have insisted; but their use is distinct from that of vocational studies in the more specific sense. That both sorts of study are vocational in some more general sense, significant perhaps for logic or ethics, nullifies no difference between them that can be directly observed. One might as well argue that since all men are human, no man can behave inhumanly towards another. A vocation is any activity carried on in the interest of other activities felt to be more congenial and more intimately personal. While perhaps relatively few men of normal mentality would willingly be without any regular calling whatsoever even though a certain safe minimum of subsistence were guaranteed, nevertheless most men work as hard and as constantly at their callings as they do because only thus can they support certain other interests and activities, self-regarding or other-regarding, which they deem more essentially part of themselves.

It seems clearer to say, in such a connection as the present, that when a man's interest in his vocation goes beyond this point and approaches, for example, the absorption of some musicians or painters in their art or of some investigators in their research, that man puts off the vocational attitude then and there. The activity has become self-sustaining and is its own excuse for being; the only problem now is that of its due adjustment to other human interests. For a "war-lord" we regard this problem as urgent. The care of a mother for her child, the gardener's pride in his roses, the missionary's zeal for converts, the busybody's hunger for gossip, are other examples. In these and other like cases all possible technical skill may be applied to the immediate end in view but the end is sufficient in itself to a degree that is seldom attained by the canal or bridge of the engineer, the lawyer's brief or the surgeon's procedure for an operation. We must recognize such interests as representatives of a non-vocational type or level of experience, and their characteristic productions as belonging to art or play, to morality, to love or to worship.

§ 8. What then is the upshot of our argument? We set out to determine the nature and the limitations, should there prove to be such, of vocational education. To what conclusion have we come? We appear now to be justified in concluding that there are certain more directly personal relations of a non-vocational sort toward an enlightened participation in which a vocationally centered education can not in any adequate way contribute. All normal persons, it may indeed be granted, in some sense have "knowledge" of these relations, but an acquaintance gained through instinct and from accidental personal contacts alone cannot suffice for the guidance of an intelligent individual in a democratic society. It cannot qualify him for the guidance of others or in any way to play the part of a citizen on the broader stage. The elevation of the lives of other men, which it is the part of good citizenship to desire and to strive for, can only consist, in the last resort, in the enhancement of just these most intimately personal elements in their experience. Without this, nothing else that may be done for them can greatly matter. But to desire with sincerity, with imaginative vividness and with lasting devotion that other men may live abundantly, one must oneself have really lived. "Nothing," remarked Walter Bagehot, "is more unpleasant than a virtuous person with a mean mind. . . . Mere virtue belongs to a charity schoolgirl and has a taint of the catechism."¹¹ A philanthropist or reformer is without adequate incentive and vision for whom the common relations and activities of life have signified nothing important or uncommon because his nature was unfurnished and undisciplined. In the end he must lapse into stale and conventional admonition and the reliance on "machinery" of Matthew Arnold's philistine.

¹¹ *Literary Studies*, Vol. II: Essay on "Tennyson and Browning".

III. SOME PRACTICAL CONSEQUENCES.

§ 9. We may stop at this point to consider very briefly certain practical aspects of the problem of vocational and non-vocational education from the point of view of the college curriculum.

And, first, it may have appeared that, in arguing above for the necessity of liberal studies, we were raising a false issue. For, as we saw at the outset, it is held by many that the superiority of our present-day secondary education over the college preparatory course of fifty years ago should excuse the college of today from all concern with these subjects. For the sake of the argument, at least, there is here no question of the advantage of liberal studies; but it is held that on entering college today the candidate for a profession should be permitted to put away these childish things and give his mind to the serious business of life. He has read *Julius Caesar* and the *Merchant of Venice* in the high school; why should he have to read *Hamlet* and *Othello* in college? If he will never do this of his own accord, it is a fair inference that the infliction of a high school course in Shakespeare was a needless cruelty. Likewise the history of the United States is supposed to be taught in the grammar school and it may be studied again in the high school; ancient, mediaeval and modern history also are high school subjects. If it is regarded, on all hands, as desirable that elementary instruction in the modern languages should be relegated from the college to the high school, why should not the principle be given a wider application?

The obvious fact ignored by this contention is the impossibility of giving in the high school more than the merest elements of any of the liberal or humanistic subjects. This is as true for these subjects as it is for any of the scientific or mathematical studies which are directly preparatory for the student's specifically professional course. If algebra and Euclidean geometry must be supplemented by analytical geometry and calculus in the interests of specific competence in engineering, it is no less true that the romantic, pictorial and didactic aspects of historical and literary study need to be supplemented, for the liberal interests of maturer life, by the artistic, the reflective, the critical and the evolutionary. If there is question here, it surely cannot lie against this perfectly parallel necessity; what is covertly questioned is the reality of any life-long need whatever for liberal discipline. We may speak of Literature, History and Politics—even of Psychology, Economics and Ethics—as high school subjects. But we should avoid the fallacy of mistaking the names for the things themselves and

assuming that such subjects can be definitively "learned" and finally "assimilated" by the student before the age of eighteen or nineteen, because the titles can be neatly listed, with "credits" allowed, on the record cards of the Registrar. Literature and History are continuous functions of the growing and the socially mature intelligence, not mechanical Montessori tasks that can be finished early by the precocious and put aside. The documents and the other objective materials to which the school directs the literary and the historical interests of its pupils have a variety and complexity of content that make them all the while increasingly relevant to the intellectual problems and personal experiences that ensue upon the close of the secondary period and the student's entrance into college. And what is true of History and Literature is still more clearly true of the "newer humanities," Political Economy, Politics and Sociology, and of the old ones, Psychology and Ethics.

For the whole group of liberal studies moreover, there would be a special disadvantage in their abrupt discontinuance at the close of the high school course, followed by the student's exclusive devotion in college to his professional preparation. This indeed is virtually what happens in the case of intending engineers—a situation less often openly defended as desirable in itself than excused as inevitable for the present, in view of the urgent industrial demand for trained engineering service. It is very generally recognized that at about the age of graduation from the high school there is a well-marked change, both intellectual and moral, in young people—a transition from the mingled introversion and self-distrust of earlier adolescence to a conscious attitude of criticism and independent judgment in matters of conduct, belief and purpose.¹² In this transition lies the justification for the definite discontinuance of the secondary school course with its appropriate methods of instruction and discipline and the commencement of the college in which in various ways the difference can be given due recognition. And our present concern with the matter is to see the unwisdom of a sudden and complete cessation at this critical time of all regular provision for the liberal interests. The result, aside from the substantive loss, of which no more need be said,—the result is the association of these interests, in the student's scheme of values, with the restraints, the deferences, the romantic story-loving credulities of childhood and early youth. Nor indeed is this association untrue; but the discovery is effectually precluded by a discontinuance of liberal studies that these germinal interests of childhood have their maturer

¹² Cf. G. S. HALL: *Adolescence*, Vol. II, pp. 527 ff.

and more constructive phases also; and a loss is incurred thereby that can be made good in later life only for the exceptional individual and through some exceptional type of experience and opportunity.

§ 10. From this we may pass to a second question—which is however of minor importance, once the need for the requirement of a collegiate course of liberal studies is established. Is it desirable that courses in such subjects as History, Literature, Economics, Psychology, Philosophy and Natural Science should be accompanied by certain of the more elementary courses of the strictly professional curriculum during the third year or should a sharp separation between the two types of work be made at the end of the third year of college? It may surely be taken for granted in any consideration of this question that what is gained by the professional student through the pursuit of non-professional studies is meant to be mainly influential during the period of mature life, in which the profession is to be actively practiced. Whatever may be the date at which the professional student finally “gets his culture off,” it is hoped and believed, whether or not with entire assurance, that some effectual reminiscence of his adventures in culture will remain with him to make a difference in his after years. It would seem then that the curriculum should be so arranged as to assure the most intimate and fruitful interaction between the diverse elements of his education in the after years that are to put curricula and theories of education to the crucial test. And thus it would appear desirable that the inevitable contemporaneity of all types of interest in adult and active life should be matched, so far as possible, by a like contemporaneity of types of study during the period of education. Concurrent series of impressions and mental activities more effectively interpenetrate and more surely coalesce into some sort of working unity of mental attitude than do successive series. Moreover an entrance upon professional study in the third collegiate year allays the student’s natural and legitimate impatience for an introduction to his chosen life-work and in so doing, it may have a favorable influence upon his attitude, during the third and fourth years, toward his remaining non-professional courses. We must not be unmindful in all this of the very late postponement of the time of entry upon active professional life that has come about in recent years from the lengthening of the high school course and the ever lengthening period of required professional training. To meet this difficulty a year of the college course, as every one knows, has been quite generally in our universities given over to the first year’s professional work in law and medicine—on the theory that this elementary professional work has also a sufficiently general educative

value to make it acceptable towards the Bachelor of Arts degree. But notwithstanding this concession the general situation as described is by many regarded as far from satisfactory. Is it desirable that the young lawyer entering college at twenty should not enter on the work of manhood until twenty-six, the young physician not until twenty-seven or twenty-eight? This is a question on which the judgment of representatives of the professions concerned would be most important. The hardships of the long preparatory period may be considerable for individual students not financially well-endowed and the professions themselves may suffer by the exclusion of an occasional able recruit from their ranks. On the other hand the vital interests of clients and patients are presumably entitled to consideration in the matter. But in any event, is it clear that the remedy, if a remedy is deemed needful, must be found in a shortening of the already shortened college course? So to decide before the entire pre-collegiate curriculum of the school system has been gone over would be a hasty and inconsiderate action in taking which the universities might serve the community ill. How much time, one wonders, is lost in the lower schools through the over-crowding of classes, through inefficient teaching, through meaningless repetition of largely meaningless subjects and through mechanical drill in parts of subjects like percentage and interest which are educationally worthless but are supposed to be vocational? By all means let the college course commence if possible for the majority as it now does for some, at seventeen or eighteen—in rare cases even at sixteen. But let not the present extent of association of non-professional with early professional courses in the college curriculum be diminished. If possible let the principle of contemporaneity, as we have termed it, be recognized and then extended from law and medicine to embrace the engineering courses also. As for the later stages of more special work in the professional curricula, it is desirable that after four years of associated professional and non-professional work in the college, the mind of the student should be left free for three years to grapple with the purely technical elements and divisions of his subject. Concentration upon exclusively professional work at the age of twenty-three is vastly different in its effect upon a man's whole intellectual and moral attitude from a like step taken at nineteen at the end of the high school course. The problem of maintaining an atmosphere and spirit of humanism through a period given over to such courses as Sales, Evidence, and Bills and Notes, or Dermatology, Materia Medica and Blood-vessel Surgery is a problem upon which a layman may well hesitate to speak. It may be left to the wisdom of the liberally educated professional faculties concerned.

§ 11. A few more general remarks upon the status of non-professional subjects in the college and we shall be done with this part of our discussion. And first, in accordance with the above contention that no education that can properly be called vocational is a sufficient education for any one preparing for a vocation, it must follow that non-professional courses should be offered to professional students precisely as they are offered to non-professional—that is to say, as having an intrinsic interest and human worth of their own irrespective of their contribution to professional competence. The latter aspect unquestionably need not be austere ignored in the conduct of such courses but on the other hand attention need not be anxiously invited to their contributions at every turn. A justly symmetrical treatment of these subjects should be aimed at, such as will enable them to speak for themselves and to make, each one, its own total impression of specific worth. A subject studied profits the soul of a student as a game profits the mind or the body of a man—when it enlists whole-hearted activity for its own sake and on its own merits, with as little thought as may be, during its course, of benefit to be derived. As a learned colleague of the writer, and a valiant humanist, expresses it, the liberal subjects should no longer be discredited by the timid apologies of those who profess to believe in them. And at this point may not the steady coöperation of the professional faculties be invoked?

There is of course a fundamental difficulty in the situation—just as in every situation in which anything important is waiting to be done there is a “fundamental difficulty”. If non-professional courses are declared to be serviceable, though indirectly, to professional ends, students will readily accept the declaration on trust and “go in for culture” with perhaps only a minimum of half-humorous grumbling. But if they are frankly told that this is not the root of the matter—that the principal value of their non-professional courses will not be found in heightened professional competence, properly speaking, but in a better balanced and more enlightened view of the world at large and of their profession as only one function among many in the world—if they are told this frankly, their grumbling may lose its quality of humor and increase to a stubborn protest. Some years ago in conversation, the question was put, with evident “consciousness of victory,” by a professor of a science preliminary to medicine, “If students don’t want the non-professional courses why should they have to take them?” The question expressed a frequent and elementary misconception. The case in hand is only one of a whole great class of situations in our experience in which the value of an action, the intelligible reason for performing an action, cannot be conceived and understood until once

the action has been performed. Other instances of the type will readily suggest themselves; and for the type or class as a whole it is true that to refuse to act until the value is known is precisely the way to shut oneself out from ever knowing it. But if we do not know the value beforehand how can we willingly act? This is the seeming paradox in all growth of intelligence through action. The solution is found throughout the years from childhood until one stops learning, in the open-minded willingness—indeed eagerness—to trust and to experiment that is a fundamental thing in human nature. And this quality college students have in goodly measure. In their having it indeed, lies the very possibility of their being educated. But like life itself, it is easily enfeebled and quenched out. A short-sighted over-emphasis on the vocational interest on the part of advisers will do this and so also will a too compliant acceptance, by instructors in the non-vocational subjects, of the principle of the vocationally centered type of education. For according to this principle each subject studied must contribute in one way or another to vocational effectiveness and, as we have seen, the vocational ideal, even at its best, ignores a whole range of essential human interests. There is a further confusion if the general principle that a student should be obliged to pursue no study that will be without use to him, whether in a vocational way or otherwise, is understood to mean that he shall pursue no study that he does not "want". A single symphony in a month or in a life-time may be in a certain sense the exact measure of my present "want" for music of that particular sort. But I may actually listen nevertheless to three in a single week if I cherish the hope, for any reason, that symphonies may some day give up their secret to me. That a student does not "want" a certain subject in the very definite sense in which he wants his dinner need be no bar to his wanting it in an inquiring and experimental way if he is well-advised and he is wise enough to "want" to be advised. For whatever else education may do, one of its functions is precisely the disclosure and the communication of wants which the self-assertiveness of youth, if left to itself, would never have discovered or acquired. If the non-professional subjects are presented effectively and with conviction, in their native and proper quality, they will attain to their highest value for the student, vocationally as well as otherwise.

IV. THE INCOMPLETENESS OF A PURELY LIBERAL EDUCATION.

§ 12. It was suggested at the outset that our general problem in this discussion might be approached from two directions. In what has thus far been said the attempt has been made to determine the most comprehensively organized type of education that can properly be called "vocational" and to consider the adequacy of this type of education as preparation for a vocational or professional life. It has been held that, as an ideal preparation, such a type of education must be judged inadequate. I have therefore argued for the preservation and the extension to other professions of the three-year collegiate requirement now generally in force for entrance upon the professional study of law or medicine.

We have now to inquire whether this relation between vocational and non-vocational training of which we have been speaking is mutual or one-sided. Independent and liberal non-professional training is necessary to the ideal type of education for a vocation. Must we match this with the parallel statement that a strictly liberal education, likewise, is at its completion deficient, even considered as liberal education, for having lacked a due interfusion of the other sort? If we say that a vocationally centered education cannot bring forth the best fruits, must we say also that a strictly liberal education is a plant without roots? If so, the relation between the two sorts is one of interdependence.

And now let it be said that I have no intention of gravely arguing for the desirability of being able to earn a living. There is indeed difference of opinion among educational theorists and other people as to the precise sense in which the earning of a living can be regarded as worth while but as to the main question there is entire unanimity so far as I am aware—a unanimity which includes even the most convinced defenders of the unabbreviated and unmixed liberal curriculum. "We know," declares President Meiklejohn, "that every man should have some special task to do and should be trained to do that task as well as it can possibly be done."¹³ The only question worth discussing as to the need of having a vocation and of being trained for it, is accordingly a subordinate one—but it is one upon which much must depend when the organization of the collegiate curriculum comes under consideration. Is the ability to earn a living a thing *positively* good, because it makes for the most effective expression and use of the powers of human nature; or is it necessary and desirable only in the *negative* sense that without this ability, except under the most uncommon circumstances, one cannot live at all? If we answer

¹³ In *The American College*, p. 168.

this question in one way, we shall regard education for a vocation as a type of training necessary to the most effective grasp and most truly vital appropriation of the training and instruction that independent liberal studies have to offer. If we answer it in the other way we shall accept vocational training as a necessary evil of our mortal lot.

"So far as we can bring it about," says President Meiklejohn, "the young people of our generation shall know themselves, shall know their fellows, shall think their way into the common life of their people, and by their thought shall illumine and direct it. . . . But one of the terrible things about our generation is that the principle [of intellectual understanding] which it accepts so eagerly in the field of the vocations it refuses and shuns in the deeper things of human living."¹⁴ These are, I think, words of genuine insight and well-conceived purpose from which no man who tries to think in terms of the realities of life, instead of in catchwords and clap-trap, can for a moment withhold assent. But I cannot believe that the indispensability of independent and unapologetic liberal education which President Meiklejohn so convincingly affirms compels or even permits the consequences which are drawn from it. "The liberal school, and the professional," says Dr. Meiklejohn, "are . . . separated by their choice of the activities which each shall study. Every professional school selects some one special group of activities carried on by the members of one special trade or occupation and brings to the furtherance of these the full light of intellectual understanding and guidance. The liberal school, on the other hand, takes as its content those activities which all men carry on, those deeds which a man must do in virtue of the fact that he is a man; and within this field it seeks to achieve the same enlightenment and insight."¹⁵ Let us consider this contrast of "groups of activities" a little more closely. What, in detail, shall the separate liberal college teach? And Dr. Meiklejohn replies, "The liberal college would learn and teach what can be known about man's moral experience, our common speech, our social relations, our political institutions, our religious aspirations and beliefs, the world of nature which surrounds and moulds us, our aesthetic strivings and yearnings—all these, the human things that all men share, the liberal school attempts to understand . . ."¹⁶

These are the "human things that all men share". But Dr. Meiklejohn has omitted from the list one human thing that, directly or indirectly, is surely as generally shared as any of these. And that is none other than the human fact of having a vocation. "Every man should have some special task to do," we are told. But every man *has* some special

¹⁴ *Op. cit.*, pp. 168, 166.

¹⁵ *Op. cit.*, p. 166.

¹⁶ *Ibid.*

task to do or else he is a parasite upon men who have. There is no known human society in which the wants and efforts of its members do not surpass what nature, unaided and unbidden, will do for them, and when we say this we are saying that vocation, whether individual or collective, in human societies is a perfectly universal institutional fact. And more than this—it has certainly been in all history an extraordinarily influential fact. Every page of the history of religion is written across with the evidence of its moulding and motivating influence; “our common speech,” which is one of the subjects of the “liberal college,” must beyond question have owed, if not its origin, at all events its main incentive and lines of development, most largely to vocational junctures and demands. And what shall be said of our moral judgments, our political institutions and our knowledge of the World of Nature—which not only “surrounds and moulds us,” as Dr. Meiklejohn reminds us, but which we from our side have learned how to mould by our vocational arts? If the life of man had been non-vocational like that of the brutes what would our morality and government be like today? What mind could conceive the method or the steps of such an inquiry? And would there be such a thing as science at all? Where, again, is a man’s morality put more crucially to the test than in his vocational relations? And what severer strains can be put upon the mechanical efficiency and flexible vitality of a country’s political and legal institutions than the strains of a developing industrial order?

Why then, one wonders, must liberal studies be so sedulously kept from contact in the same curriculum or the same institution with the vocational and professional? Why must the two types be successively pursued and on no condition contemporaneously? If there is to be one life in which independent interests cross and recross, check and further each other, why must there be two courses of study in two schools? It is true that there are many “special trades or occupations” in which men separate and ply their special skills while all men are moral, all men religious, all men need government and have speech. But no man has speech or morality or religion or government but gains for these new development and vigor and more vivid realism through their continual touch with his vocational pursuits.

The story is as old as Aristotle. What is the function of man, asks the philosopher—that will tell us in what man’s good consists. It is not the function of the mere cobbler or the flute-player or the carpenter—nor is it life, which man shares with plants, nor nutrition nor sensation, which he shares with the animals. The function of man is what is distinctive of man and what all beings that are men can therefore do. And this function is “rational contemplation”; in the exer-

cise of this lies man's happiness. It is because we thus conceive the nature of the gods also that we call them happy. For "what kinds of actions" asks Aristotle, "do we properly attribute to [the gods]? Are they just actions? But it would make the gods ridiculous to suppose that they make contracts, restore deposits and so on. Are they then courageous actions? Do the gods endure dangers and alarms for the sake of honor? Or liberal actions? But to whom should they give money? It would be absurd to suppose that they have a currency or anything of that kind. . . . [Indeed] whatever relates to moral action is petty and unworthy of the gods."¹⁷ And so, we may add, in the abstracting logic of Dr. Meiklejohn—which is identical with Aristotle's—these things and the training that relates to them are unworthy of man also—but man must submit because he cannot throw off the chains of his vocational slavery. He is a god indeed, but he must be a cobbler or a carpenter also. "To go to college at all," writes Professor Shorey, "is to decide that you can spare three or four years for studies that are something more than the irreducible minimum of equipment for citizenship and something other than the vocational or professional mastery of a bread-winning specialty."¹⁸ The suggestion is that, before the days of bondage close upon our youth, their freedom should be kept unqualified. The shortened college course and the intermingled subjects of the last two years represent, from this point of view, a concession to stern necessity. Let there be such courses for those who can do no better. But for the fortunate let there be liberal colleges. For the gods there need be no colleges at all—for they have never fallen to this welter of corporality, blindness and growth out of which even the happiest and best of mortals must painfully struggle.

The modern mind protests against this superstition. The philosophy of Plato, from which Aristotle, strive as he might, was never able to free his own, was an immense achievement of human genius and a factor of immense influence and worth in the growth of our civilization. But, in the uses to which it is put in the educational and literary criticism of a certain contemporary American group, it comes close to a fadish archaism. The thought of today looks forward to a future in this earthly life in which even the commoner vocations of men shall not hinder and debase but shall contribute to men's strength and upbuilding. For historical reasons into which we need not enter, neither Greek philosophy nor even Greek mysticism could do this.

The liberal college, we are told, is to learn and teach man's moral nature, man's government, man's art and religion, man's close depend-

¹⁷ *Nicomachean Ethics*, Book X, Chap. VIII (Welldon, trans.).

¹⁸ *The American College*, p. 23.

ence upon Nature. But in no program of collegiate education are these kinds of knowledge avowedly kept apart as impersonal matters of intellectual or speculative interest alone. The college teaches the moral and social nature of man but, ostensibly and officially at least, it is not content unless also its students are personally moral. The students study the institutions of government in the class-room and they are encouraged to organize and govern themselves as students outside the class-room. They study the ideas and institutions of religion and they are urged also to be themselves religious. They study, in the sciences, man's relations with the material world he lives in, but the college, joining precept to instruction, advises them to ventilate their sleeping-rooms and it may even require them to take certain "units" of "physical culture" and to be vaccinated. How, then, can the liberal college confine to the seclusion of the class-room its acknowledgment of the influential part the institution of vocation has played in every branch and ramification of man's life? For the acknowledgment cannot be refused, or long deferred—not even by the liberal college. Will the student's insight into his non-professional studies be helped or will it, on the other hand, be hindered, if he has an avowed and a directly personal participation in this universal human interest? The college cannot really "teach" and "learn" this interest in its full historical importance if the curriculum is planned with a studied disregard of its claim for recognition as a personal interest of the student. No scheme of education can be really "preparatory" for a vocational career if it treats the vocational motives, for the time, as if they were non-existent. We must not forget that most defenders of the unmixed liberal college are professors and for most of them, at least, their entire collegiate course was a directly vocational preparation.

§ 13. I have contended in an earlier connection¹⁰ that the requirement of three years of liberal collegiate studies now very general for the study of law and medicine ought to be continued and, so far as possible, extended to other professions. The ground of this contention turned out in the end to lie in the psychological distinction between *knowledge about* and *acquaintance with*. Under the first head belong the technical arts and the positive sciences. The second head indicates the general type of experience which it is the function of literature, history, the fine arts and ethics to afford. From the standpoint of life and conduct, "knowledge about" things is *instrumental* to the ends which we construct by conscious deliberation and adopt as our objectives in behavior. From the same standpoint are needful, for the uses of this constructive function, the cultivation of our interests and the systematic deepening and

¹⁰ Pp. 15-22 above.

broadening of our "acquaintance with" what life and conduct have in store. To slight this type of training is to shut one's eyes to the danger that instrumental knowledge and skill may be misspent. And there may now appear to be some conflict between such a statement of the case and the contention we have just been urging. If we so press the distinction between the ends of life in their immediate quality and the vocational or instrumental type of knowledge that subserves them, how can we believe in the vitalizing influence of a student's vocational interest upon his interest in non-vocational studies? It has indeed been pointed out that, on our third level of vocational training, certain so-called liberal studies may have an undeniable vocational effect. But if we go beyond this to assert the positive value of a vocational interest on the plane of liberal education are we not conceding after all that very claim of the vocational interest to preëminence that we disputed?

The answer lies ultimately in the fact that among all our interests, the vocational is notable for the perfectly obvious urgency, for most men, of the issue to which it relates. It is a concern that cannot long be postponed or evaded. Within its province, the penalties of neglect and mismanagement are less disputable and perhaps more impressive to the physical senses themselves—I do not say more to be dreaded—than in any other department of life in an advanced society. And it is this impressive imminence of the vocational problem for the individual that makes it a ready and natural approach to the fields of liberal study. For in all of these there is abundant evidence of the formative influence of vocational factors. A few instances will suffice.

A student has chosen medicine, for example, as a professional course and is looking forward with imaginative interest to a career that is certain to be filled with the issues of human happiness and misery. Can it be questioned that he has in this a basis for sympathetic comprehension of a large part of the primitive magic from which religion took its departure on the way "from spell to prayer"? And an insight of the same kind might even come from an interest in agriculture—especially if the interest is backed by some personal experience of the vital hazards and anxieties that in ruder times gave planting, the harvest and the fecundity of animals their great rôle in religion. If the legislation of Solon or the Gracchi, the "Statutes of Westminster," the Black Death, the rise of the cities and the guilds, are to be "taught" by the liberal college, will a sound learning of them be aided by a sterilized personal innocence, in the student, of all interest in industry, in law or in business? Great turning points and developments in history bring to view the complex interplay of intellectual, religious, and ethical tendencies with the political and the economic. These intimate relations, to be sure, will too often invite in vain

the learner's interest and comprehension. There will always be minds for which, first and last, the profession or vocation chosen will remain a means of money-getting. There is no class of irresponsibles in society more dangerous potentially than these. And there are minds of another sort in which a native impetuosity and egotism develops into professional bigotry and arrogance in spite of all educational influences. At its worst this attitude need not be ignoble; at its best it may coexist with a genuine professional enthusiasm and immense service to society. No student, let it be insisted, can profit by liberal studies who does not approach them with an open and responsive mind and a purpose of gaining from them the characteristic things they have to offer. To suspect that the present argument forgets this is to misunderstand its purpose. But neither should the besetting dangers of a liberal bias be forgotten—its deficient sympathy and realism, its protective repugnance to analysis, its verbal obsessions and preoccupations, its academic daintinesses. There is no exemption from human fallibility on either side. What is needful is a closer interaction without surrender by either side of any of its positive and characteristic motives.

Unquestionably then, if a student's vocational interest is to make his liberal studies more liberalizing, its inevitable limitations must be frankly recognized while its value as a potential source of his personal interest in the liberal studies is made the most of. If the student is preparing for the conduct of business he will find morality and the State of more tangible and impressive concern than if he must come to their study with only a compliant and neutral recognition of their "human importance" at large. For the study of these institutions, in their history and in their present development, must have in our day increasing concern with problems of commerce and industry. We may know well that individuals will be content to think of their chosen career as a shabby game of money-getting and law-dodging. We may know that for others business is a sort of vast graciousness of supermen who win exemption from morality and the law by their high labors for the weaker sort. But for all this, there need be no question that most will have a frank desire to understand their work in its relations, being unwilling either to conceive it meanly or to vaunt it foolishly. By this approach they will gain more surely a just conception of other interests in life, discovering through the very aggressiveness of their vocational bias the resistances it must encounter and the limitations it must acknowledge. But it can hardly be necessary to go further into illustration. Every liberal subject in Dr. Meiklejohn's list must acknowledge some special accessibility of the kind in question. That this should be evident, there is only needful a less scholastic and conventional view of the subjects of the liberal curriculum—a franker and more resolute

curiosity as to the realities with which they purport to deal, a conception less colored by the presumption that they are in some transcendental sense "things of the mind" or "concerns of the soul," set apart from those material entanglements of existence for which man's mere brain and muscles are quite good enough. It seems certainly a gratuitous paradox to assert that a student's comprehension of any subject will be more firm or more justly balanced if he is exempt from all personal concern with any of its important historic or contemporary bearings.

The contention accordingly is not that the vocational contacts of the liberal subjects render them useful for the purposes of vocational education. To that effect, indeed, much might be said, and something has been said already in the course of this discussion. But our present standpoint is that of liberal education, not vocational; we are arguing not that vocational education may be made vocational in a better sense and in a higher degree by admixture of the liberal studies but that liberal education is made more liberal by admixture of the vocational. The purpose is not to bring these studies down to the vocational plane so that the vocational student may be patient with them for a while, nor to win their acceptance as amusements or amenities by the confession that they are "no better than they should be". On the contrary, our concern in this connection is with the importance for the liberal student of the vocational interest and of vocational studies. *Can* the liberal college "teach" and the liberal student "learn" the liberal subjects without a realizing sympathy, born of personal participation, with those vocational motives which an intelligent realism, carried into the liberal studies, must discover there? If so, the case is exceptional, for the advocates of the liberal college are prone to explain the shortsightedness of their critics by their lack of those personal qualities and attainments on which sympathy with the aims of liberal education depends. But if sympathy is an aid to understanding not sometimes but always, the liberal college is unwise in disdaining the assistance which an interest so powerful and so nearly universal as the vocational can afford.²⁰ If the liberal college does this, it must inevitably "teach" a strained and over-edited version of the liberal subjects.

Nor need there be fear that interest will be restricted to the vocational aspects of the liberal subjects if these are allowed to serve as a way of approach. Were this likely to be true it might indeed be better in more

²⁰ "It is clear, however, that the aims of liberal education can be to some extent realized through the measures adopted for a generous vocational education. . . . These and many more possible examples suggest that the beginnings in vocational study may inspire interests and motives which carry the student far over into the field of liberal education, with a degree of vital appreciation which could be procured in no other way . . ." DAVID SNEDDEN: *The Problem of Vocational Education* (1910), pp. 74-77.

ways than one to enlist interest by other means. But to be apprehensive of such an outcome argues not so much a solicitous loyalty to liberal culture as a lack of entire confidence in its power of appeal. One believes with conviction in the worth of a knowledge of "man's moral experience, our common speech, our social relations, . . . the human things that all men share". Shall there then be a faint-hearted questioning whether these subjects in their wholeness and proportion will be able to make their impress? Will this impress be prevented by any personal interest of the student that has found also a patent exhibition in the actual course of general history, in the evolution of the state, in the literature, religion or morality that he is to study? There is always a bias, no doubt, in favor of the more congenial or the more familiar aspect. An interest in medicine or law or engineering may give to certain events or tendencies or personages in history an importance that a maturer judgment would not recognize. And what is true for history is of course no less true for poetry, for philosophy, for art and for the sciences. But the teacher who knows the value of a good opening, welcomes any thoughtful judgment that a student will utter and defend. The correction of onesidedness and disproportion will come in due course if the judgment is sincere. A partial interest will find its own correction through a jealous scrutiny and questioning of others that contest its dominance. Facts and aspects of fact that resist analysis into the terms a particular interest knows, will gain the recognition they deserve all the more surely for the eagerness with which their independence may be questioned. As every teacher of ethics knows, there is never a class of sophomores and juniors without its "egoistic hedonist". The refreshing boldness of this partisan of daylight for dark places always holds a sympathetic though perhaps a minority following of his fellows. But in the end he is likelier than the more complaisant sort to see the arbitrariness of the assumptions on which such a view must rest. His comprehension is more intelligent and sure than theirs because he had active preconceptions that could be aroused to self-defense.

V. CULTURE AND THE TYPES OF EDUCATION.

§ 14. The traditional purpose of the college has been to conserve and hand on the elements of "culture". It may appear that if the contention of the foregoing paragraphs is sound—if we hold a liberal education to be more liberal, instead of less, for having had contact with a vocational interest—we are looking at culture in an unusual way and conceiving it as made up of elements not always clearly included in it. Our right to do this may be questioned. Perhaps, it may be said, you *have* proved that an education of mixed type is more suited to the social conditions of today; perhaps culture can no longer survive in a utilitarian world and must go down. But if all this be so, let there be no attempt to hide the tragedy. Let us clearly see and know what we are losing; if we must be content with a substitute, let it not come to us falsely labeled. The new education may be useful. It may train the eye, the hand and the wits, and minister to our ease and gratification, but cultural it is not! The objection must in a sense be admitted. We *are* holding to the old and honorable word and are using it in a sense which it has as a rule not borne distinctly. But in doing this we are merely refusing to allow the word to remain preëmpted to a use that is ultimately indefensible. Let us not forget that there are times when, as Chesterton declares, disputes about words are decisively important for our dealings with real things. Our discussion accordingly may conclude with a consideration of the nature of culture in relation to the parts of education. In so doing it will return to certain questions indicated in the first division. We must make clear the conception of culture by which, in our second division, vocational education was judged and found wanting and by which, in the fourth division, a purely liberal education was found deficient.

(a) It is usual to speak of the liberal studies as exclusive or pre-eminent means toward culture. The phrase "liberal culture" too easily suggests, in its current use, that culture is exclusively liberal, the adjective only bringing the invariable quality to notice by way of eulogy instead of naming culture of a particular kind. In accordance with this usage no culture from another source and of a different type is possible. Against so exclusive an assumption the conception of scientific culture has been urged as an equally authentic type. But at this point the argument has often gone astray and the real significance of this important contention has been lost sight of. There has been more eagerness to break the cultural monopoly of the liberal studies than to describe clearly the cultural contribution to a conjoint result which the sciences have to offer.

"I hold very strongly . . .," wrote Huxley in 1880, "that for the purpose of attaining real culture, an exclusively scientific education is at least as effectual as an exclusively literary education."²¹ It is clear that while Huxley undoubtedly rated scientific knowledge higher, if choice had to be made, than the literary discipline given in English schools and colleges, he wishes in this passage only to maintain that neither literary education nor scientific by itself can suffice for culture. "For culture certainly means something quite different from learning or technical skill. It implies the *possession* of an ideal, and the *habit* of critically estimating the value of things by comparison with a theoretic standard."²² And accordingly, in the balanced education which Huxley conceived to be requisite for culture, were to be found not only *Erkunde*, "the peg upon which the greatest quantity of useful and entertaining scientific information can be suspended," but likewise Moral and Social Science, Literature and History.²³ "I should say," he declares, "that an army, without weapons of precision and with no particular base of operations, might more hopefully enter upon a campaign on the Rhine, than a man, devoid of a knowledge of what physical science has done in the last century, upon a criticism of life."²⁴ But with this there go repeated statements like the following: ". . . I am the last person to question the importance of a genuine literary education, or to suppose that intellectual culture can be complete without it. An exclusively scientific training will bring about a mental twist as surely as an exclusively literary training. The value of a cargo does not compensate for a ship's being out of trim . . ."²⁵ Nevertheless in the polemics of some defenders of scientific education, Huxley's wise assertion of the coequal necessity of the scientific with the other elements becomes transformed into something very different. The sciences, he held, are no less truly requisite for culture than the liberal disciplines. From this it has been fatally easy, for some, to slip over to the contention that a certain precise and identical thing called culture, which the liberal studies *only* were supposed able to impart, the scientific disciplines can give just as well. Thus suddenly and unawares, culture comes to be thought of as a sort of mark or substantive thing and in place of Huxley's original contention we have the assertion that this unique and unitary thing can be had by one way as certainly as by another. Culture becomes a kind of essence or precipitate, obtainable equally well from dif-

²¹ "Science and Culture," in *Collected Essays*, Vol. III, p. 141.

²² *Op. cit.*, pp. 143-144 (italics mine).

²³ "A Liberal Education; and where to find it," in the same volume, pp. 108-109.

²⁴ "Science and Culture," p. 144.

²⁵ *Op. cit.*, pp. 153-154.

ferent sources by different processes, as sugar is obtained from cane and from beets. We have in this logical lightning-change—and from a quarter one might have supposed least likely to supply it—a perfect Platonic instance of the substantializing of an abstract concept. And the retort from the liberal camp was obvious. Whether the sciences are “cultural” or not in some Pickwickian sense, their problems, their methods and their subject-matter are plainly *different* from those of the liberal disciplines. They cannot then possibly be cultural in the same way. The only dispute worth while turns upon a question of distinctive quality and value; the right to enjoy a high-sounding title that has been emptied of specific meaning is not worth claiming or contesting. And the original claim of the liberal studies to cultural sufficiency thus reappears, to all intents and purposes unabated.

Without an ultimate reference to conduct it is impossible to attach definite meaning to the conception of culture. This is our present contention. If the study of the sciences cannot yield the same result as the liberal studies it is because conduct, as a complex harmony of interests and actions, has had need for inquiries by diverse methods into diverse fields to give it guidance. And the liberal studies unless they acknowledge this reference must be as embarrassed as the sciences to defend their claim. For let us grant for a moment that they are the exclusive medium of culture—that all who doubt this deserve to be set down summarily as uncultivated—that the very suggestion that the sciences are also necessary shows one congenitally incapable of culture. Certainly a circle like this is complete and forever impregnable. But a refuge so secure is no better than solitary confinement. It is a tedious duration on another sphere. The liberal subjects become divinely ineffable and culture becomes a mute adoration. And this is a consequence involving many inconveniences. If a culture so austere breaks silence in its own behalf and in praise of liberal studies it must inevitably resort to the language of behavior and results. The cultivated person, we shall be told, is one who, under given conditions of emergency or stress, *does* this thing or *does* that. His attitude and his conduct distinguish him in some characteristic way from the man who may be learned or original or observant or imaginative but is not cultivated. His actions make for harmony and direction in the course of events instead of for confusion and violence. It is difficult to conceive any definition that does not depend at last upon ideas and distinctions such as these. But with conduct serving thus as the ground of definition, neither an exclusive nor an alternative claim of cultural value on the part of any one type of study, liberal or scientific, can be established.

(b) A separate claim of cultural value for science forgets, we have

seen, the distinctive characters of science and the liberal subjects. A similar claim for the liberal subjects we have seen to be unintelligible. In what way then does our notion of conduct both substantiate and reconcile the two contentions?

Conduct, in so far as it has been modified in a given instance by educational influences, must show a change in two essential ways. The end toward which conduct is directed will, as a rule, be altered more or less in its details; in any case it will be more clearly and explicitly present in mind than it was before. And the dependence of conduct on surrounding conditions and things will be better understood and more definitely recognized. The first sort of difference issues from a reconsideration of the former purposes by which the individual's conduct or voluntary behavior was controlled—this reconsideration being due either to an unwelcome interference which one strives so far as possible to find a way of overcoming or to an affirmative suggestion or opportunity which one wishes, so far as prudence will allow, to accept. The second sort of difference in conduct results from the careful noting of the hindrance and furtherance offered, by particular features of the environment, to items in the forming plan of new behavior. Knowledge of this sort is scientific, whether it be of the simple and largely qualitative sort that may suffice for the commoner junctures of experience, or exact and complex enough to serve the ends of technical industry and the professions. Knowledge of the other sort is knowledge of acquaintance. It consists in an appreciation of the quality and possible worth of the ends of effort which have to be compared and valued. These possibilities may be of the limited range and the familiar sort involved in a simple problem of domestic economy or may have the scope and the remoteness of bearing that perplex a great issue in the policy of a nation. A broad and clear comprehension of the substantive interests and ends of human nature and a training in their comparison and appraisal constitute the proper aims of the liberal studies.

As these liberal and scientific sorts of knowledge have their rise together in the exigencies of conduct so they find in conduct their unitary expression and effect. But although culture must be defined in terms of its relation to conduct, it is not to be measured directly in terms of the *extent* of knowledge of these kinds, either singly or combined, that the individual has at command. The junctures of life are too diverse and the amount of knowledge requisite to meet them all would be immeasurable. Culture would be possible only to the inert if it required the possession of all the experience and information one will need to determine the choices one is called upon to make. Men may increase to vast proportions both their acquaintance with the qualities of life and

their knowledge about man and nature without thereby coming nearer to this quality. For culture is a "function" or "power" of knowledge in personality which may be manifest in some degree at any level of actual attainment. "The mechanic at his bench carries a quiet heart and assured manners, and deals on even terms with men of any condition."

§ 15. What then are the specific elements of personal quality that liberal and scientific knowledge are severally able to contribute? The nature and uses of the complementary types, as kinds of serviceable knowledge, have already been set forth—perhaps sufficiently. In what way, we may now inquire, does each have its personal reaction, not merely as knowledge stored in memory for specific uses but in its more intimate and formative effect? How does each sort contribute to that second nature of a man with which he stands in the center of his world and copes with the issues which confront him? This is a large question but a few words only must suffice by way of suggestion. The differing natures of the types of knowledge may be expected to distinguish somewhat their respective influences.

An assurance and steadiness of mental attitude in junctures calling for reflective choice is the characteristic outcome of a familiar and discerning acquaintance with the qualities of life. And such an acquaintance it is the function of liberal studies to afford. One knows the man of cultivation in a time of stress, not alone by his ability but still more by his willingness to see and hear; and he holds throughout a confident balance and a patient reserve of judgment until the case is closed. He has seen much and heard much before. Liberal studies should render more intense and impressive the common and the uncommon experiences that make up the course of daily life. They should lay the basis for an appreciation of aspects of experience that might otherwise pass unnoticed, as the elements of a harmony may be discriminated by the aid of simple tones. They prepare the individual with a measure of foreknowledge of the basic emotions and feelings in terms of which ultimate description of the cardinal issues of life must run. Thus for the man of cultivation problems will be chiefly new perhaps, in the relations and proportions of their elements; if they have more material features of novelty, he has learned also something of the art of giving weight and value to the novel in his final judgments. All this goes far to justify assurance and from the assurance of the cultivated man comes openness of mind. For it is dogmatism, not open-mindedness, that is the surest betrayal of misgiving and self-distrust. A claim of infallibility foreshadows the discontinuance of infallible pronouncements. When dogmatism is not half-conscious "camouflage" to shield one's per-

sonal credit or interests, it is (more honorably) a ban upon a discussion for which there seems to be no promise of a safe and constructive outcome. But the assurance proceeding from culture is of another sort. The cultivated man is temperately sure of himself; the dogmatist merely professes to be sure of his dogma. The cultivated man knows that only the actual course of events can justify or prove him wrong. The dogmatist dreads the course of events and would stay it if he could.

To insist upon conceiving culture as an attitude of mind significant for conduct may appear an arbitrary restriction of its meaning. We are accustomed to think of culture as a knowledge of classic literature, a correct taste in the fine arts, a trained enjoyment and understanding of music, a perfection of speech and manners, or all of these together. Nations as well as individuals are deemed cultivated because they are musical or poetical or preëminent in painting or sculpture. Distinction in such ways as these was, until yesterday, carelessly acknowledged by some as sufficient ground for a people's claim of world-dominion. Moreover culture means in our estimate of a people, not only frequency of the creative gift but, perhaps even more, an understanding and enjoyment of works of art by the generality. So restricted a conception of culture as has been proposed may seem therefore to part company perversely with the most significant things the term has commonly suggested. No such arbitrary innovation is, however, intended. The cultural influence of the fine arts in their widest scope is not disputed nor is it suggested that their development ought to be confined within the metes and bounds of a dogmatic ethics. But in and of themselves they do not *constitute* culture, and this, it seems, should not be found a hard saying. For, as an interest in the life of a particular individual, an art may take different directions of development. It may tend toward sheer breadth of content, issuing in learning or voluminousness of acquaintance with the infinity of elements and themes upon which the art can draw. Or the individual's interest may tend toward a refinement of discrimination and enjoyment within a narrower congenial field. And if neither tendency may be condemned out of hand, so neither can be accorded without question the quality of culture. We know on excellent authority that for culture our interests require symmetrical development. And within the province of an art there must be organization some appreciation of each type of composition through appreciation of all other types. There must be restraint upon inordinate appetite for experience for its own sake, and freedom from endless subtlety in which the form and meaning of a whole are lost. But *what are* symmetry and organization? When is appreciation competent and just? At what point does thirst for knowledge become morbid curiosity and subtlety

in the development of a theme need correction by "the sense of humor"? It is in answering questions such as these that culture takes on definite character as an attitude of judgment. It imposes upon the arts no dogmatic standards. It prescribes no inflexible norms to restrain the freedom of artistic creation and govern aesthetic criticism. It has no need or right to dictate the themes or the media with which the arts shall work nor to urge upon the arts an ulterior motive. But culture none the less must value the arts chiefly for the personal discipline they can afford. The discipline it deems needful from the arts, as from education generally, must be one which enhances those qualities of mind and personal character upon which critical judgment and rational progress in men's relations to each other in society must depend. This ultimate reference gives requisite meaning and authority to culture's ideals of grasp and comprehension, of proportion, discrimination and responsive sympathy. It supplies the intelligible test by which a nation's or an individual's rightful claim to cultural preëminence ought to be measured.²⁶ If the arts are to continue as organic and influential powers in social life they must not forget their ancient obligations in this regard. Apart from objective considerations such as these, the language of criticism expresses only the irresponsible personal preferences of the critic who happens to be speaking.

§ 16. We have now to consider the cultural significance of scientific knowledge. That the contribution of science must differ from that of the liberal disciplines has already been asserted and enough of illustration has been given to explain the contention, even if not fully to prove it.

It was natural, perhaps, that in other times the liberal studies should have seemed an adequate basis for culture. In any serious and critical juncture of life attention must be busied first of all with planning the course of action to be taken. Justice and consideration towards others and a reasonable concern for oneself and those intimately near to oneself must bring actively into play that whole apparatus of personal qualities and powers with which we have seen the liberal studies, in the last analysis, to be concerned. And the outcome of this deliberative effort may well seem the essential and conclusive matter. The merely executive and technical aspects of the case may be simple enough. What to do is the problem of perhaps tragic interest; how to give the conclusion effect may involve nothing more difficult than the signing of a scrap of paper or an answer of Yes or No.

Precisely this in principle was the type of situation in societies like

²⁶ As all the world now knows, and will remember, a national culture that vaunteth itself and envieth and is puffed up is a brazen barbarism in disguise.

ancient Greece and Rome or mediaeval Europe if we compare them in point of scientific knowledge and technical resources with the society of today.²⁷ Our modern possibilities of action are in all directions vastly larger. Desires and demands which for the moment pass the limits of available knowledge only set today new problems for research and ingenuity. But the ancients lived lives which, however satisfactory to themselves, were in convenience and comfort, in freedom of movement, in the means of learning and communicating, and in numberless other ways, immeasurably less well furnished than our own. The wisdom of life with which Greek philosophy significantly closes its development is the lesson of the futility of mundane desires; in this, though with temperamentally differing premises, Epicurean, Stoic and Neo-Platonist are at one. The wise man, the man of culture, in a world in which the limits of large and important innovation have been virtually attained will make up his accounts with life in terms of the settled, the abiding and the continuously satisfactory. His continuing problems will be those of self-control, the refinement of taste, the conduct of the understanding and the husbanding of the indispensable but modest material support of his existence. For science such a life has little need; for some parts of liberal knowledge the need is greater. Whether the automobile could have tempted Epicurus from his garden we can of course, at this remote day, only conjecture.

It is thus accordingly that the illusion of the cultural sufficiency of the liberal disciplines may have arisen. With the rise of science in modern times the case has been clearly and in a revolutionary fashion altered. We have seen indeed that the "victory" of science in its contest for academic recognition is conceded and that very generally the protest of those who represent the liberal subjects is no longer against science but against its vocational tendencies. By an unfortunate confusion of terms that reflects a confusion of ideas we even find science spoken of not infrequently as itself a part of *liberal* education, united with other liberal studies in a common hostility toward the various vocational encroachments. If then the sciences, though not belonging to the *liberal* group of studies, supply an essential element in *culture*, how shall the contribution with which they are to be credited be described? The sciences, considered as significant for conduct, make known

²⁷ It is of course easy and far too common to underrate the scientific knowledge and skill of ancient peoples. Every fresh statement of the case by competent authority brings surprises that make one wonder just how the comparison would stand if our knowledge of antiquity in this respect could be anything like complete. For a convenient recent summary Breasted's *Ancient Times* (1916) may be consulted; pp. 217-220, 228-236, 351-362, 466-475 and elsewhere.

the qualities and dependable behavior of things. They acquaint the individual with the resources upon which he can count and the hindrances which he may expect in his undertakings. In modern society the manner of accomplishing men's purposes as compared with their preparatory shaping in reflection calls for an amount and intensity and technicality of consideration relatively greater than in any earlier age. The cultural tendency of science for the investigator, the practitioner and the general student alike becomes therefore a matter of increasing interest. If the liberal studies make for a sensitive balance in deliberation the sciences induce an attitude of measured confidence and eagerness in action. And they form a habit of dispassionate scrutiny of the facts one has to do with, unhindered by preconceptions as to their nature or their traditional immunities and prerogatives.

"For even as children are flurried," wrote Lucretius, "and dread all things in the thick darkness, thus we in the daylight fear at times things not a whit more to be dreaded than those which children shudder at in the dark and fancy sure to be. This terror therefore and darkness of mind must be dispelled not by the rays of the sun and glittering shafts of day, but by the aspect and law of nature."²⁸ But the dispelling of terror was a negative motive. The "aspect and law of nature" which Lucretius saw, could have in his day, for many reasons, no outcome more positive and fruitful than this; the negative service alone was possible. But in its revival and development by the moderns in another world, the atomic conception could become more and more a method for the specific analysis of phenomena. As an "aspect of nature" it was now a definite invitation toward the aggressive reshaping and reconstruction of material things. It ceased to be only an antidote for superstition and mysticism and became the basis for an optimistic and an enterprising outlook on the world. And in the modern man of science, one commonly senses, I think, something of this forward-looking spirit—an attitude of mind immensely reinforced in later times by the development of evolutionary conceptions in biology.

By the study of the sciences, then, the student may gain the sense of being really at home in the world he lives in. "If you go to a restaurant," says Chesterton, "you must drink some of the wines on the wine-list. . . . But if you have a house and garden you can try to make hollyhock tea or convolvulus wine if you like. For a plain, hard-working man the home is . . . the one wild place in the world of rules and set tasks. The home is the one place where he can put the carpet on the ceiling or the slates on the floor if he wants to."²⁹ This, however, is

²⁸ *On the Nature of Things*, Bk. II (Munro, trans.).

²⁹ *What's Wrong with the World*, p. 73.

the "wildness of domesticity". There is no reason to fear that the typical student trained in the sciences will infallibly show forth the cultural discipline he has undergone by feats so picturesque. But he will quite probably do things sooner or later which will give alarm. It is not long since the published accounts of Luther Burbank's free handling of the "natural kinds" of plant life called forth earnest protest in some quarters. It was declared presumptuous to measure the perfections of the created forms by the paltry requirements of mere human taste and convenience and it was wanton perversion of the natural order of things to set in place of the existing types new mongrel breeds having no prescriptive place in the scheme of creation. Older instances of a like sense of impropriety or worse may be drawn from the history of inoculation and the use of anaesthetics.³⁰ Still other evidence of the same sort is afforded by mediaeval legends of the diabolical origin of certain inventions and discoveries and of gifts of wisdom or shrewdness to daring individuals—who, however, usually contrived at last to cheat the Devil of his compensation.³¹ But on the whole we of today are very willing that the man of science should be at home in his world. Nature for him is no longer a fixed array of natural plant and animal kinds and of fixed material substances which may be classified in accordance with their surface aspects or their customary uses. Instead it is a vast system of interchangeable energies which are so dispersed throughout all things and so regardless of the seeming boundaries that divide things for our senses that only in a sub-atomic order if at all are irreducible individuals conceivable. And all this means an infinite plasticity of things from which the scientist gains a sense of being free to make over available materials of whatever sort, whether animate or inanimate, into the forms he desires—if he can.

And if the scientific "aspect of nature" is a standing invitation to action, a knowledge in detail of nature's powers and availabilities can only heighten eagerness to take advantage of the invitation. It is true that the same zeal that carries through a crusade against malaria or

³⁰ A. D. WHITE: *A History of the Warfare of Science with Theology in Christendom*, Vol. II, pp. 55-66.

³¹ At the San Francisco Exposition of 1915, I chanced one day to witness the operation of a pneumatic device for milking cows. As the motor producing the exhaustion of air began to whirr, a feminine bystander manifested some signs of uneasiness. The animals made not the slightest opposition to the proceedings, but the woman, after a few moments, exclaimed with bated breath to her companion, "It doesn't seem as if 'twas right!"

I have heard dislike expressed for the well-known portrait of Huxley by Collier, on the ground of the matter of fact assurance with which the knight-errant of evolution stands holding in his hand familiarly a human skull.

typhus may be shown in the destruction of a conquered country's animals by the scientific plantation of disease. "Nikalgin" can be matched by poison gas as a product of scientific knowledge and skill turned to practical account. If there is no limit to "the altruism of science" so there is no visible limit to the uses of science in the exploitation of human follies, weaknesses and depravities. There is no permanent and necessary difference between the most trivial diversions and the most vital necessities of men in the extent of their demands upon science or the readiness of science to respond to their demands. All this must be granted to the full, and it would be a grave concession indeed for an argument meant to show the *sufficiency* of scientific culture. But if we conceive of culture as an attitude in conduct, such facts as these lose their appearance of concession and become instead so much more evidence for the need of a comprehensive and socially effective cultural discipline. For we are not to think of either liberal education or scientific as sufficient, nor do the contributions to culture due to either remain distinct and separable. The cultivated attitude or habit that rests upon the combined support of both has the singleness and indivisibility of life itself. It is not possible to ascribe certain parts of action to food and others to the air we breathe. Scientific training needs the orientation and incitement of the liberal disciplines to supplement its partiality. The liberal disciplines need likewise the arousal to constructive effort and the freedom from conventional deferences and taboos that the sciences unquestionably can bring. The case is one of interaction and mutual influence at every point. The freedom and vitality of the liberal interests keep awake and active men's interest in the world of nature upon which their lives depend and the prosperity of their scientific undertakings stimulates in turn their forward-looking interest in life. It is no accident that the great periods in the history of literature and philosophy have been also periods of widening geographical knowledge, increasing scientific curiosity and expanding commerce.

Scientific training in the colleges ought not however to be limited to preparation for research or for a technical career. There should be cultural courses also in which "the aspect of nature" and some systematic conception of the human and social significance of nature's infinite resources can be effectively presented.³² That college students

³² "Our efforts at science teaching up to this time have been disappointing for reasons which the above outline avoids: the elementary work has been altogether too incidental; the advanced work has been prematurely abstract; besides, general conditions have been unfavorable. The high-school boy who begins a systematic course of physics or chemistry without the previous training above described lacks the basis in experience which is needed to make systematic science

whose collegiate training is exclusively in the liberal subjects are laying a foundation for culture can be maintained only by those whose definition of the term is naïvely traditional and dogmatic. We are not concerned here directly with the actual utility of science or with what Professor Shorey perhaps means, in a passage already quoted, by science's "indisputable leadership in modern life". Our question is not whether the telephone is a convenience, or efficient communication a basic condition of modern democracy; nor is it whether colleges and universities ought to give instruction in these necessary subjects. Our question concerns the cultural value, not the specific utilities, of science. In what intelligible sense of the word can one be deemed cultivated who, however genuine his enjoyment or correct his taste in literature and the arts, is a speechless and helpless stranger in the realm of nature? He must lack something of a man's due sense of firm and clear position in his world and of willing readiness for the world's emergencies.

The cults and sects of popular mysticism, as they flourish so numerous today among us, here point a moral. Undoubtedly they are to some extent a betrayal of deficiencies in our education as a people. We may look to a wider extension of scientific education of a soundly cultural type to correct the excesses and inanities of these movements and to render possible a clearer expression of the important human motives which they probably express. And our liberal education also has been too much a thing apart. It has transmitted a "genteel tradition"³³ in which the desire and right of the individual to be healthy, happy and prosperous have had scant recognition and approval in a positive way. The modern insistence on these worldly goods, as expressed in the movements referred to, has little of cordial affinity with the older ideals of self-sacrifice, fortitude, heroism, romantic devotion and personal loyalty³⁴ which are themes of classic literature, conventional history and orthodox religion. With the unmistakable impatience of mysticism, these modern cults short-cut science as a materialistic illusion. In doing so they win wide acceptance because the human qual-

genuinely real to him. The usual textbook in physics or chemistry plunges him at once into a world of symbols and definitions as abstract as algebra. Had an adequate realistic treatment preceded, the symbols, when he finally reached them, would be realities. The abyss between sense training and intellectual training would thus be bridged." ABRAHAM FLEXNER: *A Modern School*, p. 11 (The General Education Board, N. Y., 1917).

³³ Cf. G. SANTAYANA: "The Genteel Tradition in American Philosophy," in *The Winds of Doctrine* (N. Y., 1913).

³⁴ Cf. BERNARD IDINGS BELL, in *The Atlantic Monthly*, November, 1917, p. 264.

ity and import of science have not yet been made familiar to the general mind. In a groping way their view of life is modern but their unseeing view of Nature is as old as the *Upanishads*.

§ 17. At this point a word will be in place concerning the vocational aspects of scientific training. It is evident that in what has just been said there is no basis for a sharp distinction between scientific training for the sake of culture and scientific training that looks to ultimate vocational proficiency. On the contrary, what has been said of the scientific aspect of "nature," in its modern as distinct from its ancient statement, suggests for it a distinctly vocational import—not indeed that nature ought to be viewed as essentially raw material for the privately gainful uses of the trades and professions but that nature is the store of things and energies upon which all our enterprises, generous as well as self-regarding, spiritual as well as material, are free to draw. Of what sort these undertakings are in fact to be, is of course another matter. Some of them must be gainful and others may be broadly humanistic. Some will be wasteful at the best and others worth the effort and ability they enlist. Some will be irksome and deadening while others may approach closely in interest to the freedom of artistic expression. But we may call them all vocational if in our thought about them and our pursuit of them they are primarily activities instrumental to our chosen ends. Nature in her scientific aspect is nature ready to give toward our ends what aid she can. Any distinction therefore between cultural and vocational courses in the sciences must apparently turn upon the greater complexity and the more special character of the applications which certain vocational or professional courses must prepare for. There are perhaps courses in manipulative technique and in very special and recondite bodies of fact that involve no peculiar principles and can add little or nothing to those general dispositions significant for conduct with which culture has to do. Much of what has undoubted cultural value in the less specialized courses for professional students may have to be omitted from courses intended for others. But such a change of scope can not or at all events need not deprive these courses of their vocational character and spirit in the broader sense of the word. The difference it would seem may be one of degree and not of kind.

There is an "aspect of nature" however, of which nothing has been thus far said. There is a kind of "knowledge" of the details of nature's behavior that has no obvious relation to the carrying out of any specific undertakings. These must now be briefly considered because they may appear to afford another basis for a cultural type of scientific instruction,—a basis that in no sense, whether broad or narrow, involves any

vocational elements. I refer for example to nature's grandeur and sublimity, to the infinite diversity and the astonishing adaptations which nature presents, to the inconceivable minuteness and subtlety of the processes on which all that is perceptible by our dull senses must depend. In the mood of awe or wonder, even reverence, with which one may contemplate these aspects, one has little thought of self-assertive action upon them or by means of them. Rather is the immediate "behavioristic" outcome a greater patience and reserve, a submission of personal interests and efforts, likes and dislikes, opinions and theories, to the overwhelming course and power of the spectacle one beholds.³⁵ It would seem that when the sciences are accorded, as they sometimes are, a place among the liberal studies, some such descriptive and natural-history type of instruction must be intended. Nature is to be shown in its vastness, its complexity, its variety and its subtlety, and touch must not be so far lost with the habits of thought and the preconceptions of everyday life as to deprive these aspects of their due emotional impressiveness as wonders and surprises. Only thus, it may be held, will the *truly* cultural value of science be preserved; to advance beyond these limits to a rigorously analytic study of natural phenomena must inevitably breed familiarity. The modesty, the uncagerness, the "cosmical high-mindedness" ³⁶ befitting the man of culture will be lost in the determined and perhaps inelegant striving of the artisan and the engineer. The "liberal college" shall "learn and teach" what can be known about the "world of nature," which, in Dr. Meiklejohn's words, "surrounds and moulds us"—a phrase suggesting no self-assertive reaction upon Nature on man's part as the appropriate fulfilment of the teaching.

And here the distinction between pure science and applied may be invoked in behalf of a type of scientific study accepted as cultural because it is non-vocational. Cultural science, in this meaning of the term, is supposed to be pure science. Pure science is mistaken for a term of eulogy and descriptive science of the emotionally stimulating sort referred to claims additional prestige from this association. Nothing could be more misleading. Pure science, it seems clear, is non-vocational solely in its independence of immediate vocational promptings and in its exemption from vocational restrictions on the extent and persistency of its researches. It proceeds upon no special postulates, works with no different conceptual apparatus and is occupied with problems of no different logical type. "I often wish," declared Huxley, "that this

³⁵ *Job*, xxxviii-xli.

³⁶ The quality of *megalopsychia* which Aristotle, in his *Ethics*, illustrates at length from the individual's social relations.

phrase, 'applied science,' had never been invented. For it suggests that there is a sort of scientific knowledge of direct practical use, which can be studied apart from another sort of scientific knowledge which is of no practical utility, and which is termed 'pure science'. But there is no more complete fallacy than this. What people call applied science is nothing but the application of pure science to particular classes of problems."³⁷ "If science," says another writer, "ultimately has sprung from, and is continually springing anew from, occupations, science has repaid the debt both by rendering those who follow her teaching more skilled in their occupations and by actually giving rise by her discoveries to absolutely new types of occupations."³⁸ There is no kinship in problems or ideas between pure science, rightly so called, and a study of science conducted for a cultural effect in the manner suggested. So far indeed is such a kinship from the truth that the cherished freedom of pure science from vocational direction finds its warrant not in the less but in the greater scientific rigor, completeness and coherency which are thereby rendered possible.³⁹

If then the sense of sublimity and wonder ought not to be the goal, or to determine the spirit, of scientific study in the college, there are nevertheless few men who would willingly themselves lose it or who would so order education as to provide no opportunity for its arousal and cultivation. If to be scientific meant to have no seeing eye for Kant's "starry heavens," no sense of the miracle of birth or the tragedy of death, it would be easier than it is, for the layman, to visit a laboratory without envy of the scientist. But there is, in the first place, no sufficient empirical evidence for the necessity of such a sacrifice, although scientists, of course, like other people, have their temperamental differences. And it seems, in the second place, a strange assumption that a realization of Nature's readiness to contribute to the fulness of men's lives will somehow fail to supply these ancient emotions of mankind with constantly renewed occasion. The sea is not more vast and restless than the subtler medium that conveys the wireless message over the sea's untilled expanse. The immensity of space becomes not less but more real if we can know that the substances faintly glowing for us in the most distant nebulae are those with which the chemist is familiar in his useful operations on this planet. And finally if these sentiments in their more primitive and Oriental form have value for the Western spirit, they are themes of poetry and the other arts. Their expression in the arts will keep suf-

³⁷ "Science and Culture," in *Collected Essays*, Vol. III, p. 155.

³⁸ Benchara Branford, quoted by J. Arthur Thomson in *An Introduction to Science*, p. 230.

³⁹ See p. 10 above.

ficiently fresh our "racial memory" of autocratic times when Nature's mood toward man was one of high indifference or jealous anger varied by kinder intervals of sovereign graciousness. In industry and politics we find this pattern of authority no longer wholesomely inspiring. In science it is simply irrelevant. But its survival, as an aspect of Nature, in the arts and its recognition in so far on the liberal side of education may be long continued. In forms cleared of irrelevance and disharmony the arts express with high intensity the ideals, the norms of conduct and the views of nature, about which, on the whole, the life of a period is organized. This expression may be in forms directly representative, as in literature and to some extent at least in painting, or in forms emotionally congruous and confirmatory, as in music and architecture. And innovation in the arts follows always after, seeking to express, as in our own day, changes that have already got under way in the motivation and tenor of the rest of life. Thus the sublimity, the awfulness and the wonder of nature are aspects congenial to an earlier intellectual and cultural level now largely superseded among the more advanced of western peoples. But in their artistic survival they may nevertheless be made to serve the life of today even though other motives may better express our life's more distinctive phases. There is need today for a sense of nature's terrors though the terrors we chiefly dread are hostile bacilli instead of fire-breathing monsters of larger bulk but less ferocity. There is need of a capacity for wonder, lest our satisfaction with what we know and what we possess grow too complacent and inquiry learn idly to depend for its incentive on the spur of physical compulsion. The peacefulness of a wide vista or of nature's larger order can afford not only relaxation for a holiday but, still more, a pattern and incentive for man's constructive efforts in the social relations of his life. Moreover, if these aspects of nature are primitive, they may serve us as a ground of sympathy and understanding in our intercourse with men of other cultures.

§ 18. Culture, then, let us say, consists in the convergence and fusion in one's personal attitude in conduct of those characteristic influences which the sciences and the liberal disciplines are calculated to exert. In earlier parts of this discussion much was said of the importance of the social sciences as aids toward the correction of the vocational bias. In the present connection, however, no mention of these subjects has been made. The omission has been by design, in order that the main argument might not be confused by reference to a group of sciences whose relation to culture offers some points of apparent difficulty.

The social sciences hold an intermediate place between the natural sciences and the liberal disciplines. They are partly "knowledge about" the things that are their subject-matter and partly they give "acquaint-

ance with" certain functions and qualities of life. They thus make, more clearly than other bodies of knowledge, a dual contribution to culture. The refractory and complex nature of their "material" and the necessary inexactness of their non-experimental methods render their cultural value as scientific discipline somewhat less considerable, perhaps, than their value as affording immediate insight into life.⁴⁰ We may very briefly refer to some of the problems of these sciences in illustration of this dual character. There is a tendency on the part of certain advocates of the non-vocational collegiate course to speak slightly of the cultural value of the social sciences. This is partly in criticism of the less rigorous character of the methods of these sciences and partly due to an underestimation of their value in a liberal sense. They are held to gain the semblance of rigorous science by an illiterate and grotesque caricature of human nature or else to forfeit all claim whatever to respect by an alleged tendency to sentimental humanitarianism.

If it is the function of a liberal subject to give an impressive acquaintance with phases or qualities of human experience, it must be admitted that the social sciences deserve that character. Controversy can attach less to the fact of their ability to afford such an acquaintance than to the importance, worth or dignity of the aspects of experience they present. And this is a matter as to which neither the man of letters, nor the historian or philosopher of a particular school, can claim final authority to speak. Any such question of relative value must find its answer, at a particular time, through reference to the problems confronting an individual or a society as a whole. In seventeenth century England, for example, the most urgent problem of society was the political. Upon this, other problems, in themselves more interesting and important, were dependent. It was necessary to arrange a governmental system at once strong and efficient in the country's international relations and yet duly heedful of the religious and property rights of the rising middle classes. In the eighteenth and early nineteenth centuries, by a natural sequence, the problems were commercial and industrial, the demand being now for the removal of governmental restrictions upon commerce and for a free course, open to individual enterprise, in trade and manufacture, both at home and abroad. To the seventeenth century accordingly belong the classical discussions of Hobbes, Locke and others in political theory, while the eighteenth and nineteenth centuries saw the rise and development of English political economy and ethics. The leading problems of each period required that the thoughts of men should turn, with close concentration, to the immediate quality and to the felt worth of certain

⁴⁰ A statement which, of course, does not refer to the practical value of these sciences as organized bodies of information.

special phases of their experience. Discussion of the foundations of political authority must have been meaningless indeed for men without desire for frank association; without dislike of anarchy; without respect for authority; without a demand, so insistent as to seem innate, for rights to set the limits of obedience. Nor later, when these matters had been brought to a degree of settlement, could the morality and the political economy of the eighteenth century have taken form without a high and imaginative spirit in the nation responding to the challenge of colonial opportunities, a genius for sound construction and shrewd management, and a gift of patience in waiting for the larger future reward.⁴¹ The political theory and economics of this time were founded in a steady pre-occupation with the immediate impressiveness of these and other kindred interests and sentiments. The "scientific" systems which arose were unconsciously Utopian sketches, filled out with actual or imaginative history, to picture a social order in which these cherished interests might have play.

The value of politics and economics, for the *liberal* side of education, lies accordingly in the presentation which they give of such impulses and interests as these. They give to these familiar motives their formal names and definitions, they exhibit them in action, they point out their remoter workings and effects and thereby make manifest their presumable value in the whole system of human tendencies. And from all this results a due and measured fortification of these motives in the individual, precisely as, throughout the whole range of the older liberal disciplines, other fundamental relations and interests of life are presented with enlightening and steadying effect.

We have, for example, in political theory today, a questioning of the sovereignty of the state, just as in the seventeenth and eighteenth centuries the sovereignty of kings and the legitimacy of national systems of commercial regulation were effectively called in question. If one enters upon a study of the contemporary issue thus presented, one is brought face to face again with immediate interests and desires of men—interests which are deemed too important, too intimately human, to admit of repression, and which, it is conceived, a state calling itself sovereign in the sense of classical political theory can never or will never cordially recognize. And whatever be our answer to this theoretical view we must hold it in the strict sense liberalizing that interests which are in all of us should be brought clearly to our notice and shown to us in their power and tendency among men. The primary political problem of

⁴¹ For all of which *Robinson Crusoe* (1719) is a classic text.

today, as in the seventeenth century, is "the reconciliation of government and liberty".⁴²

As for current economic theory, its central portion deals with the problem of the value of commodities. From the general solution given, conclusions are drawn for the values of labor, of natural agents and of the services of accumulated capital. The economist's explanation of the exchangeable value of commodities is gained by a psychological introspection of the process by which individuals in practice compare or tend to compare the alternative uses to which given commodities can be put. Whether the account of this process currently given is in all respects adequate is a question not important for the present purpose. What is important for the standing of economics as a liberal subject is that its discussion of the problem of value involves a presentation and analysis of a characteristic function and personal attitude in human conduct. It is of course permissible to hold acquaintance with such an attitude to be quite unimportant. The *actual enjoyment* of wealth may be held to be a function far more truly and nobly human than the calculating choice of just what sorts of commodities one shall enjoy or an adeptness in deciding how much of one sort of "enjoyment" one shall sacrifice for so much of another. It is better to be able to enjoy a picture than to be cautiously discreet in determining whether one can afford to buy it. "The magnificent man . . ." says Aristotle, "will spend money . . . in a cheerful and lavish spirit, as a minute calculation of expense is a mark of meanness. He will consider how a work can be made most beautiful and most suitable rather than how much it will cost and how it can be done in the cheapest way."⁴³ But to be cheerfully lavish is not given to all of us. The "keener avarice" of which Emerson speaks must suffice, that we may "spend in spiritual creation and not in augmenting animal existence."⁴⁴ With the bewildering and increasing variety of commodities offered for sale in modern society and with the increasing interest of intelligent persons in their own higher welfare and development, the prosaic phenomena of economic value and valuation have inevitably gained in interest. "There are few measures of economy which will bear to be mentioned without disgust," writes Emerson—but he boldly mentions several nevertheless, and among them is the principle of spending "after your genius *and by system*". "The secret of success lies . . . in the relation of income to outgo. . . . But in ordinary, as means increase, spending increases faster, so that large incomes . . . are found not to help matters; the

⁴² The title of a recent work by J. W. Burgess (N. Y., 1915).

⁴³ *Op. cit.*, Bk. IV, Chap. IV.

⁴⁴ *The Conduct of Life; Works* (Centenary edition), Vol. VI, p. 126.

eating quality of debt does not relax its voracity.”⁴⁵ It is wholly arbitrary to dispute that to render the “economizing” attitude familiar, to present it with intensity and effect in its relations to the more substantive interests of life is to liberalize and in so far to serve as a means toward cultivation. We commonly think of economy in quantitative terms alone and we are confirmed in this by the all but universal habit of economists. But the intelligence and self-control that thrift requires assume an aspect of intrinsic dignity in a sensitive and artistic people like the French that goes far to overcome the suggestion of meanness that one commonly feels. And in an international crisis, economy can assume the moral quality of self-sacrifice. We habitually think of economy in its lowest terms as an odious incident of the struggle for existence. We are misled here by the abstracting and formal method of our logic. In actual realization we know economy more fairly as an aspect of progress and attainment. Not a few of those who affect to disparage economics as materialistic and therefore culturally worthless would make no scruple in acclaiming a treatment of precisely the same essential themes in literature or painting as unquestionably liberally cultivating.

Stress has already been laid upon the importance, in a liberal sense, of those descriptive parts of economic study which have to do with the living and the working conditions of labor of different grades and of those which have to do with the differing purposes and principles of organizations of laborers. Recent economics has been called with some impatience “a mill-owner’s apology plus some rather belated moral sentiments”.⁴⁶ The reproach is not wholly undeserved but its justification lies mainly in the sins of omission of the science. These, serious as they are, do not detract from the cultural significance of those attitudes and experiences in the course of enterprise and production upon which economics has been wont to dwell. With its human and social outlook broadened, economics would, however, undoubtedly be of more interest in a scientific sense and of greater value as a liberal study. In current theory all turns upon the *de facto* “utility” or “satisfaction” which goods are able to afford. The *nature* of the goods or services and the *kind* of effects resulting from their use for the immediate user or for society at large, are matters of no theoretical interest. Burglars’ tools and *vaudeville* are on a par with looms and lathes, and the services of teachers and physicians. “Wants” are conceived as neutral given data for the value problem; with wants standing as they do at any given time in relation to the supplies of goods at hand to meet them, the separate or “absolute” values of

⁴⁵ *Op. cit.*, pp. 111, 116-117.

⁴⁶ CHARLES A. BEARD, in *The New Republic*, Vol. XIII, No. 159 (Part 2, p. 3).

goods for individuals and their values in terms of each other are irrevocably fixed. Consumers' desires and consumers' readiness to pay determine the values of commodities and thereby, at one or more removes, the values of everything, including the services of employers, required for their production. Thus it is, presumably, that economics is an apology for mill-owners—no value-determining initiative whether for labor or for goods can lie within their province. The abstract notion of "utility," rigorously applied, seems, accordingly, to separate economic theory, once for all, from every movement cordially and constructively concerned with social welfare; economic change becomes an unwelcome disarrangement of the economist's trimly fitted terms and definitions instead of being the reality he should be preëminently competent and cordially eager to interpret. With the shift of interest, however, from utility to welfare, wants must lose their finality as the ultimate terms of explanation. For wants are, in point of fact, in constant process of redefinition in and through the course of men's economic dealings, instead of determining beforehand the terms and outcome of that intercourse. Measured by the payments offered for commodities desired, men's "wants" for commodities may be made more and more to embody and express a *constructive assertion* of what is deemed requisite, by way of compensation, for the welfare of producers. And the development of our administrative institutions tends more and more both to bring about such a general recognition of justice and necessity and to make it effectual in a secure and orderly way. The theory of economic value becomes, in such a view, a stage in the explanation of how our "wants" for goods develop and combine in systems expressive of advancing levels of culture instead of an arithmetical reckoning with given wants assumed as unvarying forces. Economics as a part of liberal education has, one may hope, possibilities well beyond any present attainment. "If . . . we take humanity in its historic contrast with divinity," writes Dean Haskins, "as the study of human affairs and interests in contradistinction to theology, or if we take it in its Latin sense of humane and liberal culture (*humanitas*), we shall find good warrant for its extension to these more modern constituents of a liberal education."⁴⁷

⁴⁷ CHARLES H. HASKINS: "The Place of the Newer Humanities in the College Curriculum" in *The American College*. Mr. Haskins calls attention to the central position of the newer humanities (history, economics, political science and sociology). "Their subject matter is human, their method scientific" (p. 44). Without questioning this statement or the conclusions drawn from it (pp. 44-46), the view taken above, it should be observed, goes somewhat further. However "human" any subject-matter may be, the application of scientific method to it results, one must suppose, in *science*—so far as the nature of the subject-matter and the methods permit. But the present contention has been that the *sciences* and the

So much, then, to suggest what may be termed the liberal content of political and economic studies. Some of the scientific or "vocational" parts of these subjects may be merely mentioned. In political science there are, for example, questions as to the most effective organization of the different branches of government—whether the legislature should have one chamber or two, whether the members should be subject to recall, and should retire all at once or in groups at stated intervals, whether the upper house should be appointive or elective, how the houses should be organized for the transaction of business, and the like. Similar questions may be discussed touching the judicial and executive branches; and there is also the more fundamental question of the right relations of the three branches—whether they should be kept separate and co-ordinate or whether the legislative or executive should acquire the substance if not the formal position of leadership. In economics likewise the greater part of such subjects as taxation, banking, money, transportation and exchange is quite clearly of the same sort, as well as all that part of general economics which goes to describe the actual working mechanism of a society's industry and commerce. All knowledge of this type is scientific or "knowledge about". In the end it

liberal subjects are to be coördinate elements in a comprehensively cultural education, the newer humanities belonging in *certain* of their aspects in the *scientific* group and in *certain others*, as explained, in the *liberal*. The sciences, both natural and social, have been held to be essentially vocational, and in harmony with this Mr. Haskins declares the newer humanities to "constitute the necessary preparation for intelligent participation in social and civic activity" (p. 45). Elsewhere, but without noting the distinction, Mr. Haskins appears to be thinking of the *liberal* aspects of the newer humanities; as where he writes, "The time has come when we might as well admit frankly . . . that for the great body of our college students the classics have lost their hold as the basis of general education, and that for the present generation the chief opportunity for giving the background and breadth of view which our conceptions of culture still demand is to be found in the study of history. For most of our students the great avenue to the feeling and experience of the race lies through the vital study of the historic past . . ." (pp. 49-50). History in this aspect clearly has the value of literature, of art and of much of philosophy, and we have argued above that the other newer humanities likewise have this sort of value as well as the value attaching to them as science and as in so far vocational. Mr. Haskins has nothing to say specifically referring to the *scientific* value of history as one of the newer humanities. History "stirs the student's imagination, steadies his judgment, and serves as the *intermediary* between literary studies on the one hand and the social sciences on the other" (p. 49; italics mine). Perhaps there is no *science* of history properly speaking—but that question cannot be discussed here. History is of course not one of the "newer" humanities except in the recent date of its admission to the collegiate curriculum. By comparison the social sciences in their present development are of recent or at least modern origin. The later origin may indicate a difference of nature.

gives us notice of the kind of consequences which may be expected to follow upon a change of any specified sort in a society's political or economic arrangements. Scientific knowledge of this sort may have, in the manner already explained, a cultural value like other science, in proportion to its exactitude and its effectiveness in application. And it seems clear that, if it is scientific, it is likewise and insofar vocational. It differs therefore from the liberal elements belonging to these disciplines. For these latter have to do with the underlying human interests which in the last resort must justify, if they are to be justified, the attention and effort which inquiries of the scientific type enlist.

A word may be said in conclusion as to the law, considered as a liberal subject. If we are to mean by liberal the characteristic of presenting in an impressive manner the qualities and junctures of experience, the law appears in at least two ways to answer the description. First it acquaints the student with the correlative rights and duties which define him as a citizen and a member of society. It makes him aware of the general modes of behavior he ought to practice toward others and aware also of those which he ought as a good citizen to insist upon from others in his own behalf. Precisely as literature, art and history acquaint him, by example and by utterance, with the *higher reaches* and the multitudinous *diversities* of human aspiration, preference and attainment, the law acquaints him, in general terms and in detail, with the elements of behavior required for social intercourse upon a normal level. The other liberalizing tendency of legal study is probably most evident when the case-method is used. A judge's disposal of any doubtful case must depend upon his estimate, expressed or tacit, of the relative importance of its various concrete features. If a certain element included in the accepted definition of a crime or a type of transaction is absent from the facts of a given case, shall this exclude the case from the operation of the prevailing rule? Or, on the other hand, are not all elements present that any "fair" and "reasonable" interpretation of the rule can require? Is the missing feature of the essence of the rule or only an irrelevant accident? By their determination of such questions as these, judges reveal the type of social life and intercourse which they consider it the business of the law to protect and maintain. Their decisions give thus, from period to period, a record of the general course and progress of cautious but intelligent opinion upon the necessary elements of social life and order. And this is an evolution whose tendencies and methods the liberal student as well as the professional will be the wiser for understanding.

VI. THE RELATIVITY OF CULTURE.

§ 19. The proper study of mankind is man. Let it be so—let us hold fast to that. But are we to mean by man the residual Humanity of Aristotle or the concrete human individual? No doubt, the advocate of separate liberal culture disavows the former notion. Of course the cultivated man is to be no abstraction. Of course the subjects of the liberal curriculum are the concrete products of historic human genius. But what is not perceived is that these protestations commit one to an acceptance of the relativity of Culture—and this in two senses.

First, a broad and genuine cultivation must find expression in the balanced fulfilment of personal functions in the society one lives in. And second, the embodiments of the culture and genius of one age can never suffice, without critical reinterpretation and supplementation, for the guidance of another. To dispute the first of these propositions makes the meaning of culture unintelligible and a matter of irresponsible caprice. It amounts, as we have seen, to asserting that a man is cultivated because he chances to have the knowledge, tastes and preferences which are—just intrinsically cultivating. To dispute the second is either naively dogmatic or naively self-contradictory. "What we need chiefly," says Mr. Paul Elmer More, "is a deeper knowledge of the classics. We need to reassure ourselves that as pure human literature they stand supreme and unapproached. . . . I am assuming, you see, that the classics contain an ideal capable of relieving us from the undue prominence of both the scientific philosophy and the humanitarianism of the day . . ." ⁴⁸ Perhaps, but how does Mr. More know? If one condemns "the scientific philosophy and the humanitarianism of the day" merely because one finds them at variance with the spirit of Greek philosophy and life, the *petitio* is obvious. If one finds antecedently and by another standard that modern life, as Mr. More asserts, is in "a state of moral blindness," ⁴⁹ discovering *afterwards* the guiding light in Plato and Aristotle, then clearly one's critical judgments have expressed a prior and independent estimate, whether wise or foolish, of what our present state requires.

The first obligation of the critic of modern life and thought is therefore to be broadly qualified in these respects. He cannot otherwise know what guides to follow or commend. He must comprehend with the justice of mingled sympathy and reserve, and he must know how to measure for himself with temperateness and accuracy. To fail in these things

⁴⁸ *Aristocracy and Justice*, pp. 90-91, 94.

⁴⁹ *Op. cit.*, p. 213.

marks an uncultivated mind as surely as high indifference to a Greek or an English tragedy that one has not learned how to read. Understanding thus our weaknesses and strength the critic will know where to seek our remedy—and he will have a means of knowing when he has found it. But in resorting to an ancient text, we must remember, there is need always of reinterpretation.⁸⁰ We commonly achieve this quite unwittingly, conceiving our procedure to be a divination, whether swift or slow, of the veritable essence. We take for this essence what accords with our uncritical present sense of worth and pass over as the nodding of genius what we do not like or find hard to understand—serenely unconscious, all the while, of the meaning and true coherence of the original. We like to call this the method of cultivated insight, enlightened perhaps by “the sense of humor”. It might better be called “natural pragmatism”. What, then, we are prone to do by nature, what we must do, it is safer to do with clear eyes and knowing why. The glamour of the classic text and style—“every word wearing the toga,” as Mr. Santayana somewhere has it,—sometimes induces, one suspects, a relaxation of the critical interest, if not of the sense of humor also. It is possible that those whom the shortness of life throws back upon the prosaic and despised translation have, in this respect at least, their compensations.

The fate of an uncritical and separatist conception of liberal culture is a reactionary attitude—as vague in its affirmations as it is ready in negation. If culture is relative, on the other hand, in the two senses I have tried to indicate, it cannot be asserted to consist in a particular substantive tradition handed on and on—whether in works of literature, philosophic systems, sacred books or symphonies. Culture is rather a quality of readiness, firmness and modest assurance in the personal attitude with which the issues of life and criticism are met. To the formation and support of such an attitude a close and long possession of at least a few of the great documents of the human spirit is indispensable. But unless this possession is to be a personal luxury, turning in the end to bore-

⁸⁰ In an unpublished paper Professor W. D. Briggs has recently argued (1) that the true aesthetic object with which appreciation and criticism have to do is a *product* of the *reaction* of the reader, beholder or listener upon the verbal text or physical art-object and never the mere text or object by itself. It is a construction of the appreciator's, an “eject,” a kind of optical “real image” thrown back toward the object by the uniquely reflecting mirror of the appreciator's consciousness. Accordingly (2) creative genius in an artist should be measured by the actual power of his work to stimulate successive generations of beholders or listeners to new and personal artistic construction of this kind rather than in terms of definitive perfections of form and substance which the printed or painted work of art is supposed to show. Cf. “The Creative Listener” by R. H. SCHAUFLER, *Atlantic Monthly*, Vol. 108, p. 335.

dom and indifference, there must be a continuing and comprehending touch with the present life. The sciences and the newer humanities must have place beside the older liberal disciplines. And culture in the individual will not be spoiled but proved and strengthened by the acknowledged pursuit of a broadly vocational interest.

